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FAIRFIELD

Institute of Management & Technology

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Reference Material for Three Years

Bachelor of Commerce (Hons.)

Code : 888

Semester – I

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Three Years Bachelor of Commerce (Hons.)

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Semester – I

MANAGEMENT PROCESS & ORG. BEHAVIOUR-101
Unit 1

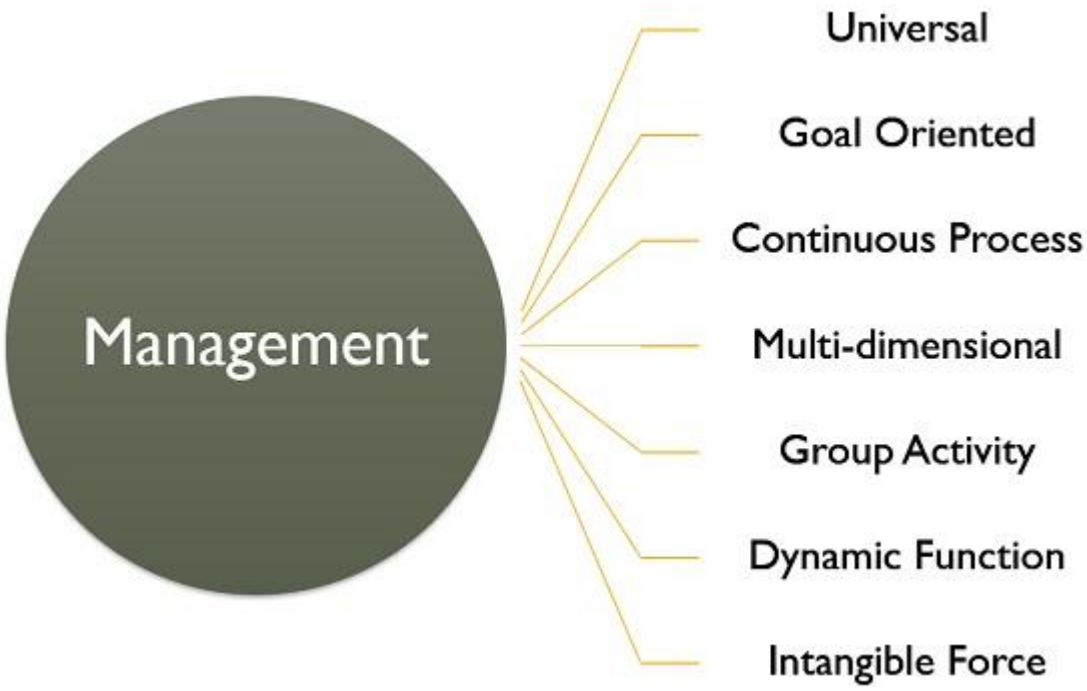
Management

According to Harold Koontz,

'Management is an art of getting things done through and with the people in formally organized groups. It is an art of creating an environment in which people can perform and individuals and can co-operate towards attainment of group goals.'

In other words, it is concerned with optimally using 5M's, i.e. men, machine, material, money and methods and, this is possible only when there proper direction, coordination and integration of the processes and activities, to achieve the desired results.

Characteristics of Management



- Universal: All the organizations, whether it is profit-making or not, they require management, for managing their activities. Hence it is universal in nature.
- Goal Oriented: Every organization is set up with a predetermined objective and management helps in reaching those goals timely, and smoothly.
- Continuous Process: It is an ongoing process which tends to persist as long as the organization exists. It is required in every sphere of the organization whether it is production, human resource, finance or marketing.

- Multi-dimensional: Management is not confined to the administration of people only, but it also manages work, processes and operations, which makes it a multi-disciplinary activity.
- Group activity: An organization consists of various members who have different needs, expectations and beliefs. Every person joins the organization with a different motive, but after becoming a part of the organization they work for achieving the same goal. It requires supervision, teamwork and coordination, and in this way, management comes into the picture.
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- Dynamic function: An organization exists in a business environment that has various factors like social, political, legal, technological and economic. A slight change in any of these factors will affect the organization's growth and performance. So, to overcome these changes management formulates strategies and implements them.

Levels of Management

1. Top-Level Management: This is the highest level in the organizational hierarchy, which includes Board of Directors and Chief Executives. They are responsible for defining the objectives, formulating plans, strategies and policies.
2. Middle-Level Management: It is the second and most important level in the corporate ladder, as it creates a link between the top and lower level management. It includes departmental and division heads and managers who are responsible for implementing and controlling plans and strategies which are formulated by the top executives.
3. Lower Level Management: Otherwise called as functional or operational level management. It includes first line managers, foreman, and supervisors. As lower level management directly interacts with the workers, it plays a crucial role in the organization because it helps in reducing wastage and idle time of the workers, improving the quality and quantity of output.

The three management levels form the management hierarchy that represents the position and rank of executives and managers in the chart.

Functions of Management

- Planning: It is the first and foremost function of management, i.e. to decide beforehand what is to be done in future. It encompasses formulating policies, establishing targets, scheduling actions and so forth.
- Organizing: Once the plans are formulated, the next step is to organise the activities and resources, as in identifying the tasks, classifying them, assigning duties to subordinates and allocating the resources.
- Staffing: It involves hiring personnel for carrying out various activities of the organization. It is to ensure that the right person is appointed to the right job.
- Directing: It is the task of the manager to guide, supervise, lead and motivate the subordinates, to ensure that they work in the right direction, so far as the objectives of the organization are concerned.
- Controlling: The controlling function of management involves a number of steps to be taken to make sure that the performance of the employees is as per the plans. It involves establishing performance standards and comparing them with the actual performance. In case of any variations, necessary steps are to be taken for its correction.

Skills of Managers in the Organizational Hierarchy:

(i) Technical Skill: It is knowledge of and proficiency in activities involving methods, processes, and procedures. Thus, it involves working with tools and specific techniques. For examples, mechanics work with tools, and their supervisor should have the ability to teach them how to use these tools. Similarly, accountants apply specific techniques in doing their job.

(ii) Human Skill: It is the ability to work with people; it is cooperative efforts; it is teamwork; it is the creation of an environment in which people feel secure and free express their opinions.

(iii) Conceptual Skill: It is the ability to see the 'big picture' to recognize significant elements in a situation, and to understand the relationships among the elements.

(iv) Design Skill: It is the ability to solve problems in ways that will benefit the enterprise. To be effective, particularly at upper organizational levels, managers must be able to do more than see a problem. They must have, in addition, the skill of a good design engineer in working out a practical solution to a problem.

Role of a Manager:

1. Interpersonal Roles

The interpersonal roles link all managerial work together. The three interpersonal roles are primarily concerned with interpersonal relationships.

- Figurehead Role: The manager represents the organization in all matters of formality. The top level manager represents the company legally and socially to those outside of the organization. The supervisor represents the work group to higher management and higher management to the work group.

Liaison Role: The manger interacts with peers and people outside the organization. The top level manager uses the liaison role to gain favors and information, while the supervisor uses it to maintain the routine flow of work.

- The leader Role: It defines the relationships between the manger and employees.

2. Informational Roles

The informational roles ensure that information is provided. The three informational roles are primarily concerned with the information aspects of managerial work.

- Monitor Role: The manager receives and collects information about the operation of an enterprise.

- Disseminator Role: The manager transmits special information into the organization. The top level manager receives and transmits more information from people outside the organization than the supervisor.

- Spokesperson Role: The manager disseminates the organization's information into its environment. Thus, the top level manager is seen as an industry expert, while the supervisor is seen as a unit or departmental expert.

3. Decisional Roles

The decisional roles make significant use of the information and there are four decisional roles.

- Entrepreneur role
- Disturbance handler role
- Resource Allocator role
- Negotiator role

Management vs Administration

Basis	Management	Administration
Meaning	Management is an art of getting things done through others by directing their efforts towards achievement of pre-determined goals.	It is concerned with formulation of broad objectives, plans & policies.
Nature	Management is an executing function.	Administration is a decision-making function.
Process	Management decides who should as it & how should he dot it.	Administration decides what is to be done & when it is to be done.
Function	Management is a doing function because managers get work done under their supervision.	Administration is a thinking function because plans & policies are determined under it.
Skills	Technical and Human skills	Conceptual and Human skills
Level	Middle & lower level function	Top level function

"Co-ordination is the Essence of Management." The meaning of this sentence implies, Co-ordination affects all the functions of management. In other words, Co-ordination affects Planning, Organizing, Staffing, Directing, Communication, Leading, Motivating and Controlling.

Classical Organisation Theory:

The classical writers viewed organisation as a machine and human beings as components of that machine. They were of the view that efficiency of the organisation can be increased by making human beings efficient. Their emphasis was on specialisation and co-ordination of activities. Most of the writers gave emphasis on efficiency at the top level and few at lower levels of organisation. That is why this theory has given streams; scientific management and administrative management. The scientific management group was mainly concerned with the tasks to be performed at operative levels.

Henry Fayol studied for the first time the principles and functions of management. Some authors like Gullick, Oliver Sheldon, Urwick viewed the problem where identification of activities is necessary for achieving organisation goals. Grouping or departmentation was also considered essential for making the functions effective. Since this theory revolves around structure it is also called 'structural theory of organisation."

Pillars of Organisation Theory:

According to classical writers, the organisation theory is built around four key pillars division of work, scalar and functional processes, structure and span of control.

(i) Division of Labour:

Division of labour implies that work must be divided to obtain specialisation with a view to improve the performance of workers. The classical theory rests on the assumption that more a particular job is broken into its simplest component parts, the more specialised a worker can become in carrying out his part of the job.

The specialisation in workers will make the organisation efficient. Various activities of a job are specified and subdivided into different components so that these may be assigned to different persons. The workers will go on repeating their work under division of labour. The performance of same work will help workers to improve their efficiency and the organisation as a whole is benefitted by this exercise

(ii) Scalar and Functional Process:

The scalar process refers to the growth of chain of command, delegation of authority, unity of

command and obligation to report. It is called scalar process because it provides a scale or grading of duties according to the degree of authority and responsibility. It generates superior- subordinate relationship in the organisation. The functional process deals with the division of organisation into specialised parts or departments and regrouping of the parts into compatible units.

(ii) Structure:

It is the framework of formal relationships among various tasks, activities and people in the organisation. The basic structural element in the classical theory is position. Each position is assigned a specific task and authority is delegated for its accomplishment. The efficiency with which these tasks will be accomplished will determine the effectiveness of the organisation. The classical writers emphasised line and staff organisations.

(iv) Span of Control:

The span of control means the number of subordinates a manager can control. Classical thinkers specified numbers at different levels which can be effectively supervised by a superior. A manager cannot exercise proper control if the number of subordinates increases beyond a certain figure, on the other hand if the number is less then his capacity and knowledge cannot be fully utilised.

2. Neo-Classical Organisation Theory:

The classical theory of organisation focussed main attention on physiological and mechanical variables of organisational functioning. The testing of these variables did not show positive results. The Hawthorne Studies conducted by George Elton Mayo and associates discovered that real cause of human behaviour was somewhat more than mere physiological variables. These studies focussed attention on human beings in the organisation.

Neo-classical approach is contained in two points:

(i) Organisational situation should be viewed in social, economic and technical terms, and

(ii) the social process of group behaviour can be understood in terms of clinical method analogous to the doctor's diagnosis of human organism.

This theory views formal and informal forms of organisation as important. The behavioural approach followed in this theory is the other contribution of new-classical thinkers.

The pillars of classical theory viz. division of work, departmentation, co-ordination and human behaviour were taken as given but these postulates were regarded as modified by people acting independently or within the context of the informal organisation.

The main propositions of neo-classical theory are given as follows:

1. The organisation in general is a social system composed of numerous interacting parts.

2. Informal organisations exist within the formal organisation. Both are affected by and affect each other.

3. Human being is independent and his behaviour can be predicted in terms of social factors at work.

4. Motivation is a complex process. Many socio- psychological factors operate to motivate human beings at work.

5. A conflict between organisational and individual goals often exists. There is a need to reconcile the goals of the individual with those of the organisation.

6. Team-work is essential for higher productivity.

7. Man's approach is not always rational. Often, he behaves non- logically in terms of rewards which he seeks from his work.

8. Communication is necessary as it carries information for the functioning of the organisation and the feelings of the people at work.

Systems Approach:

This approach studies the organisation in its totality. The mutually dependent variables are properly analysed. Both internal and external variables are studied in analysing the nature of organisation. Though this theory passes a much higher conceptual level as compared to earlier theories but different writers have given varied views of the system.

Organisation as a system can well be understood by identifying various sub-systems within it. Each sub-system may be identified by certain processes, roles, structures and norms of conduct. Seiler has

classified four components in an organisation, human inputs, technological inputs, organisational inputs, and social structure and norms.

Katz and Kahu have identified five sub-systems of organisation:

(i) Technical sub-system concerned with the work that gets done;

(ii) Supportive sub-system of procurement, disposal and institutional relations;

(iii) Maintenance of sub-systems for tying people into their functional roles;

(iv) Adaptive sub-systems concerned with organisational change; and

(v) Managerial sub-systems for direction, adjudication and control of the many sub-systems and the activities of the structure.

***Contingency Approach**:*

Even though systems approach presents a better understanding of organizational and managerial functioning but it does not provide solution for all types of organisational structures. Systems approach offers models which may not suit every type of organisation. A structure suitable for one unit may not be suitable for another. Contingency approach suggests an organisational design which suits a particular unit. A structure will be suitable only if it is tailor made for an enterprise.

The influence of both internal and external factors should be considered while framing a suitable organisational structure. This approach suggests that needs, requirements, situations of a particular concern should be considered while designing an organisational structure.

The factors which influence an organization may be described as:

(i) Environment

(ii) Technology

(iii) Size of operations

(iv) People.

These factors greatly influence a decision for the selection of an appropriate organisation for an enterprise.

Planning

Meaning:

Planning can be defined as "thinking in advance what is to be done, when it is to be done, how it is to be done and by whom it should be done". In simple words we can say, planning bridges the gap between where we are standing today and where we want to reach.

Planning involves setting objectives and deciding in advance the appropriate course of action to achieve these objectives so we can also define planning as setting up of objectives and targets and formulating an action plan to achieve them.

Another important ingredient of planning is time. Plans are always developed for a fixed time period as no business can go on planning endlessly.

Keeping in mind the time dimension we can define planning as "Setting objectives for a given time period, formulating various courses of action to achieve them and then selecting the best possible alternative from the different courses of actions".

Features/Nature/Characteristic of Planning:

1. Planning contributes to Objectives:

Planning starts with the determination of objectives. We cannot think of planning in absence of objective. After setting up of the objectives, planning decides the methods, procedures and steps to be taken for achievement of set objectives. Planners also help and bring changes in the plan if things are not moving in the direction of objectives.

For example, if an organisation has the objective of manufacturing 1500 washing machines and in one month only 80 washing machines are manufactured, then changes are made in the plan to achieve the final objective.

2. Planning is Primary function of management:

Planning is the primary or first function to be performed by every manager. No other function can be executed by the manager without performing planning function because objectives are set up in planning and other functions depend on the objectives only.

3. Pervasive:

Planning is required at all levels of the management. It is not a function restricted to top level managers only but planning is done by managers at every level. Formation of major plan and framing of overall policies is the task of top level managers whereas departmental managers form plan for their respective departments. And lower level managers make plans to support the overall objectives and to carry on day to day activities.

4. Planning is futuristic/Forward looking:

Planning always means looking ahead or planning is a futuristic function. Planning is never done for the past. All the managers try to make predictions and assumptions for future and these predictions are made on the basis of past experiences of the manager and with the regular and intelligent scanning of the general environment.

5. Planning is continuous:

Planning is a never ending or continuous process because after making plans also one has to be in touch with the changes in changing environment and in the selection of one best way.

6. Planning involves decision making:

The planning function is needed only when different alternatives are available and we have to select most suitable alternative. We cannot imagine planning in absence of choice because in planning function managers evaluate various alternatives and select the most appropriate. But if there is one alternative available then there is no requirement of planning.

For example, to import the technology if the licence is only with STC (State Trading Co-operation) then companies have no choice but to import the technology through STC only. But if there is 4-5 import agencies included in this task then the planners have to evaluate terms and conditions of all the agencies and select the most suitable from the company's point of view.

7. Planning is a mental exercise:

It is mental exercise. Planning is a mental process which requires higher thinking that is why it is kept separate from operational activities by Taylor. In planning assumptions and predictions regarding future are made by scanning the environment properly. This activity requires higher level of intelligence. Secondly, in planning various alternatives are evaluated and the most suitable is

selected which again requires higher level of intelligence. So, it is right to call planning an intellectual process.

Importance/Significance of Planning:

1. Planning provides Direction:

Planning is concerned with predetermined course of action. It provides the directions to the efforts of employees. Planning makes clear what employees have to do, how to do, etc. By stating in advance how work has to be done, planning provides direction for action. Employees know in advance in which direction they have to work. This leads to Unity of Direction also. If there were no planning, employees would be working in different directions and organisation would not be able to achieve its desired goal.

2. Planning Reduces the risk of uncertainties:

Organisations have to face many uncertainties and unexpected situations every day. Planning helps the manager to face the uncertainty because planners try to foresee the future by making some assumptions regarding future keeping in mind their past experiences and scanning of business environments. The plans are made to overcome such uncertainties. The plans also include unexpected risks such as fire or some other calamities in the organisation. The resources are kept aside in the plan to meet such uncertainties.

3. Planning reduces over lapping and wasteful activities:

The organisational plans are made keeping in mind the requirements of all the departments. The departmental plans are derived from main organisational plan. As a result there will be co-ordination in different departments. On the other hand, if the managers, non-managers and all the employees are following course of action according to plan then there will be integration in the activities. Plans ensure clarity of thoughts and action and work can be carried out smoothly.

4. Planning Promotes innovative ideas:

Planning requires high thinking and it is an intellectual process. So, there is a great scope of finding better ideas, better methods and procedures to perform a particular job. Planning process forces managers to think differently and assume the future conditions. So, it makes the managers innovative and creative.

5. Planning Facilitates Decision Making:

Planning helps the managers to take various decisions. As in planning goals are set in advance and predictions are made for future. These predictions and goals help the manager to take fast decisions.

6. Planning establishes standard for controlling:

Controlling means comparison between planned and actual output and if there is variation between both then find out the reasons for such deviations and taking measures to match the actual output with the planned. But in case there is no planned output then controlling manager will have no base to compare whether the actual output is adequate or not.

For example, if the planned output for a week is 100 units and actual output produced by employee is 80 units then the controlling manager must take measures to bring the 80 unit production upto 100 units but if the planned output, i.e., 100 units is not given by the planners then finding out whether 80 unit production is sufficient or not will be difficult to know. So, the base for comparison in controlling is given by planning function only.

7. Focuses attention on objectives of the company:

Planning function begins with the setting up of the objectives, policies, procedures, methods and rules, etc. which are made in planning to achieve these objectives only. When employees follow the plan they are leading towards the achievement of objectives. Through planning, efforts of all the employees are directed towards the achievement of organisational goals and objectives.

Limitations of Planning:

1. Planning leads to rigidity:

Once plans are made to decide the future course of action the manager may not be in a position to change them. Following predefined plan when circumstances are changed may not bring positive results for organisation. This kind of rigidity in plan may create difficulty.

2. Planning may not work in dynamic environment:

Business environment is very dynamic as there are continuously changes taking place in economic, political and legal environment. It becomes very difficult to forecast these future changes. Plans may fail if the changes are very frequent.

The environment consists of number of segments and it becomes very difficult for a manager to assess future changes in the environment. For example there may be change in economic policy, change in fashion and trend or change in competitor's policy. A manager cannot foresee these changes accurately and plan may fail if many such changes take place in environment.

3. It reduces creativity:

With the planning the managers of the organisation start working rigidly and they become the blind followers of the plan only. The managers do not take any initiative to make changes in the plan according to the changes prevailing in the business environment. They stop giving suggestions and new ideas to bring improvement in working because the guidelines for working are given in planning only.

4. Planning involves huge Cost:

Planning process involves lot of cost because it is an intellectual process and companies need to hire the professional experts to carry on this process. Along with the salary of these experts the company has to spend lot of time and money to collect accurate facts and figures. So, it is a cost-consuming process. If the benefits of planning are not more than its cost then it should not be carried on.

5. It is a time consuming process:

Planning process is a time-consuming process because it takes long time to evaluate the alternatives and select the best one. Lot of time is needed in developing planning premises. So, because of this, the action gets delayed. And whenever there is a need for prompt and immediate decision then we have to avoid planning.

6. Planning does not guarantee success:

Sometimes managers have false sense of security that plans have worked successfully in past so these will be working in future also. There is a tendency in managers to rely on pretested plans.

It is not true that if a plan has worked successfully in past, it will bring success in future also as there are so many unknown factors which may lead to failure of plan in future. Planning only provides a base for analysing future. It is not a solution for future course of action.

7. Lack of accuracy:

In planning we are always thinking in advance and planning is concerned with future only and future is always uncertain. In planning many assumptions are made to decide about future course of action. But these assumptions are not 100% accurate and if these assumptions do not hold true in present situation or in future condition then whole planning will fail.

Planning Process:

1. Setting up of the objectives:

In planning function manager begins with setting up of objectives because all the policies, procedures and methods are framed for achieving objectives only. The managers set up very clearly the objectives of the company keeping in mind the goals of the company and the physical and financial resources of the company. Managers prefer to set up goals which can be achieved quickly and in specific limit of time. After setting up the goals, the clearly defined goals are communicated to all the employees.

2. Developing premises:

Premises refer to making assumptions regarding future. Premises are the base on which plans are made. It is a kind of forecast made keeping in view existing plans and any past information about various policies. There should be total agreement on all the assumptions. The assumptions are made on the basis of forecasting. Forecast is the technique of gathering information. Common forecast are made to find out the demand for a product, change in government or competitor policy, tax rate, etc.

3. Listing the various alternatives for achieving the objectives:

After setting up of objectives the managers make a list of alternatives through which the organisation can achieve its objectives as there can be many ways to achieve the objective and managers must know all the ways to reach the objectives.

For example, if the objective is to increase in sale by 10% then the sale can be increased:

(a) By adding more line of products;

(b) By offering discount;

(c) By increasing expenditure on advertisements;

(d) By increasing the share in the market;

(e) By appointing salesmen for door-to-door sale etc.

So, managers list out all the alternatives.

4. Evaluation of different alternatives:

After making the list of various alternatives along with the assumptions supporting them, the manager starts evaluating each and every alternative and notes down the positive and negative aspects of every alternative. After this the manager starts eliminating the alternatives with more of negative aspect and the one with the maximum positive aspect and with most feasible assumption is selected as best alternative. Alternatives are evaluated in the light of their feasibility.

5. Selecting an alternative:

The best alternative is selected but as such there is no mathematical formula to select the best alternative. Sometimes instead of selecting one alternative, a combination of different alternatives can also be selected. The most ideal plan is most feasible, profitable and with least negative consequences.

After preparing the main plan, the organisation has to make number of small plans to support the main plan. These plans are related to performance of routine jobs in the organisation. These are derived from the major plan. So, they are also known as derivative plans. These plans are must for accomplishing the objective of main plan. The common supportive plans are plans to buy equipment, plan for recruitment and selection of employees, plan to buy raw material, etc.

6. Implement the plan:

The managers prepare or draft the main and supportive plans on paper but there is no use of these plans unless and until these are put in action. For implementing the plans or putting the plans into action, the managers start communicating the plans to all the employees very clearly because the employees actually have to carry on the activities according to specification of plans. After communicating the plan to employees and taking their support the managers start allocating the resources according to the specification of the plans. For example, if the plan is to increase in sale by increasing the expenditure on advertisement, then to put it into action, the managers must allot more funds to advertisement department, select better media, hire advertising agency, etc.

7. Follow-up:

Planning is a continuous process so the manager's job does not get over simply by putting the plan into action. The managers monitor the plan carefully while it is implemented. The monitoring of plan is very important because it helps to verify whether the conditions and predictions assumed in plan are holding true in present situation or not. If these are not coming true then immediately changes are made in the plan.

During follow up many adjustments are made in the plan. For example, if the expenditure planning is done keeping in mind 5% inflation rate but in present situation if the inflation rate rises to 10% then during follow up the managers make changes in the plans according to 10% inflation rate.

Plan:

Plan is a document that outlines how goals are going to be met. It is a specific action proposed to help the organization achieve its objectives. There may be more than one way and means of reaching a particular goal but with the help of logical plans, objectives of an organization could be easily achieved.

Single Use Plans:

Single use plans are one time use plan. These are designed to achieve a particular goal that once achieved will not reoccur in future. These are made to meet the needs of unique situations. The duration or length of single use plan depends upon the activity or goal for which it is made. It may last one day or it may last for weeks or months if the project for which it is made is long.

Standing Plans:

Standing plans are also known as Repeat Use Plans. These plans focus on situations which occur repeatedly. Standing plans are used over and over again. They are made once but retain their value over a period of years. Although some revisions and updates are made in these plans from time to time.

Types of Plans:

Planning is a pervasive function which means it is not the task of top level managers only but managers working at different levels perform planning function. The plans framed by top level

manager may differ from the plans formed by middle and lower level managers. The different types of plans or common plans formed by the managers at different levels are:

Objectives – Rules

Strategy – Programmes

Policies – Methods

Procedures – Budgets

1. Objectives:

Objectives are the ends towards which the activities are directed. They are the end result of every activity. An objective:

(a) Should be related to single activity;

(b) Should be related to result and not to activity to be performed;

(c) It should be measurable or must be measured in quantitative term;

(d) It must have a time limit for achievement of objective;

(e) It must be achievable or feasible.

For example, increase in sale by 10% or decrease in rejections by 2%.

2. Strategy:

A strategy is a comprehensive plan to achieve the organisational objectives. The dimensions of strategy are:

(i) Determining long term objectives.

(ii) Adopting a particular course of action.

(iii) Allocating resources for achieving the objectives.

Strategy formulation is the task of top level people and it is must to scan and understand clearly the business environment before framing the strategy. The common decisions in strategy are whether to introduce a new product or not. If to introduce then how, finding out customer for your products making changes in existing products etc. All the strategic decisions are greatly influenced by the business environment. Strategy defines the future decisions regarding the organisation's direction and scope in the long run.

For example, Choice of advertising media, sales promotion techniques, channels of distribution, etc.

3. Policies:

Policy can be defined as organisation's general response to a particular problem or situation. In simple words, it is the organisation's own way of handling the problems. Policies are made at every level because the managers at every level need to decide or predetermine the way of handling a situation and policy acts as a guide to take decisions in unexpected situation.

Policy formation always encourages initiatives of employees because employees have to deal with situations and the way of handling the situation is decided in consultation with the employees. Then they will be able to handle the situation in a much better way. For example, a school may have policy of issuing admission form only to students who secured more than 60% marks.

"No credit sale policy", etc. Introduction of new product in the market.

4. Procedures:

Procedures are required steps established in advance to handle future conditions. The sequence of steps to be followed by employees in different situations must be predetermined so that everyone follows same steps.

The procedure can be defined as the exact manner in which an activity has to be accomplished.

For example, the procedure for admission in a particular school can be:

(a) Set up a file for applicants;

(b) Accept the field forms and put them in a file;

(c) Ask for other certificates to verify score or marks of students;

(d) Put those documents also in the file;

(e) Give the file to admission in-charge.

Procedures are made common for all the departments to co-ordinate their activities. So procedures cut across all the departmental lines. For example, the procedure to handle the order by manufacturing department may involve sales department also.

5. Rules:

Rules spell out special actions or non-actions of the employees. There is no discretion allowed in rules, i.e., they must be followed strictly and if rules are not followed then strict actions can be

taken against employees who are disobeying the rules. Rules are spelt out to create the environment of discipline in the organisation. For example, there can be rule of no smoking in the organisation. Rules generally guide the general behaviour of the employees and employees cannot make any changes in them.

6. Programmes:

Programmes are the combination of goals, policies, procedures and rules. All these plans together form a program. The programmes are made to get a systematic working in the organisation. The programmes create relation between policies, procedures and goals. The programmes are also prepared at different levels. A primary programme is prepared by the top level and then to support the primary programme supportive programmes of different levels are prepared for smooth function of the company.

For example, construction of shopping mall, Development of new product.

7. Methods:

Methods can be defined as formalized or systematic way of doing routine or repetitive jobs. The managers decide in advance the common way of doing a job. So, that

(a) There is no doubt in the minds of employees;

(b) There can be uniformity in actions of the employees;

(c) These help in applying the techniques of standardization and simplification;

(d) Act as guide for employees.

If the common way of doing the job is not decided in advance then there will be confusion and comparison will not be possible. For example, for the valuation of stock, the organisation must decide in advance what method has to be adopted (lifoor fifo). So that everyone follows the same method and comparison with the past value of stock can be done, method for calculation of depreciation.

8. Budget:

Budget is the statement of expected result expressed in numerical terms. In budgets the results are always measurable and most of the time these are financial in nature but it does not mean that company prepares only financial budget. Financial budget is also known as profit plan of the

company because it includes the expected income and related expenditures with that income and the profit which the company will earn in the coming year.

Along with financial budget capital budget is prepared to find out the expected capital requirement. Operational budget is prepared where instead of finance hourly units are used stating expected hours the employees will be working. Budgets are prepared by managers at every level and lower level managers generally prepare operational budgets.

The most common budget prepared by managers at different levels is cash budget. This budget estimates the expected cash inflow and cash outflow over a period of time. Cash inflow comes from sales and cash outflow is in the form of expenses. Businessmen can find out net cash position by subtracting cash outflow from cash inflow.

Business Forecasting

"Business Forecasting is the research procedure to discover those economic, social and financial influences governing business activity, so as to predict or estimate current and future trends or forces which may have a bearing on company policies or future financial, production and marketing operations."

Types of Business Forecasting:

Various types of Business Forecasting are –

- General Forecast.
- Sales Forecast, and.
- Capital Forecast.

MBO

What is Management by Objective

The process of setting objectives in the organization to give a sense of direction to the employees is called as Management by Objectives.

It refers to the process of setting goals for the employees so that they know what they are supposed to do at the workplace.

Management by Objectives defines roles and responsibilities for the employees and help them chalk out their future course of action in the organization.

Management by objectives guides the employees to deliver their level best and achieve the targets within the stipulated time frame.

Need for Management by Objectives (MBO)

- The Management by Objectives process helps the employees to understand their duties at the workplace.
- KRAs are designed for each employee as per their interest, specialization and educational qualification.
- The employees are clear as to what is expected out of them.
- Management by Objectives process leads to satisfied employees. It avoids job mismatch and unnecessary confusions later on.
- Employees in their own way contribute to the achievement of the goals and objectives of the organization. Every employee has his own role at the workplace. Each one feels indispensable for the organization and eventually develops a feeling of loyalty towards the organization. They tend to stick to the organization for a longer span of time and contribute effectively. They enjoy at the workplace and do not treat work as a burden.
- Management by Objectives ensures effective communication amongst the employees. It leads to a positive ambience at the workplace.
- Management by Objectives leads to well defined hierarchies at the workplace. It ensures transparency at all levels. A supervisor of any organization would never directly interact with the Managing Director in case of queries. He would first meet his reporting boss who would then pass on the message to his senior and so on. Every one is clear about his position in the organization.
- The MBO Process leads to highly motivated and committed employees.
- The MBO Process sets a benchmark for every employee. The superiors set targets for each of the team members. Each employee is given a list of specific tasks.

Benefits of Management by Objectives

1. It facilitates the employees to understand their tasks and duties in a better way.
2. It is helpful in designing Key Result Area (KRA) for each employee, according to their interest, specialization, experience and competency.
3. It eliminates overalpping and confusions in the tasks and duties.
4. Every employee contributes towards the achievement of the objectives by successfully completing the tasks and duties assigned to them by the superior.
5. It creates an open communication enviornment in the organization.

In a nutshell, Management by objectives is nothing but a process wherein the goals, plans and control system of the organization are defined by the management and employees jointly.

Bounded Rationality Model of Decision-Making Definition

There are two primary models or theories for decision-making: the Rational model and the Bounded rationality model. In the former, a decision-maker attempts to optimise the decision by selecting the

best possible alternative. In the latter, rationality of individuals is limited by the information they have, cognitive limitations and time constraints.

Meaning of Organising:

Organising is a "process of defining the essential relationships among people, tasks and activities in such a way that all the organisation's resources are integrated and coordinated to accomplish its objectives efficiently and effectively". — Pearce and Robinson

Organising is, thus: (i) A Structure, and

(ii) A Process.

As a structure:

Organising is a set of relationships that defines vertical and horizontal relationships amongst people who perform various tasks and duties. The organisational task is divided into units, people in each unit (departments) are assigned specific tasks and their relationship is defined in a way that maximisesorganisational welfare and individual goals. The relationship amongst people is both vertical and horizontal.

As a process:

As a process, organising consists of two processes:

1) Differentiation,

(2) Integration.

Differentiation means division of work into smaller units and its assignment to individuals according to their skills and abilities. Integration refers to coordination of different activities towards a common goal. It provides unity of action towards **organisational activities**.

It involves:

(i) Identification of work,

(ii) Grouping of work into smaller groups,

(iii) Assigning work to every individual at every level in every department.

(iv) Defining its authority and responsibility, and

(v) Establishing relationships amongst people to make them contribute towards organisational goals in an integrated manner.

Organisation structure and process are not independent concepts. They are complementary to each other. Once the organisation process is defined, organisation structure is the end result or outcome of that process. Organisation structure is the result of organisation process. Organisation is, in fact, a structured, on-going process that defines how to achieve defined goals.

Principles of Organising:

Principles are the guidelines that promote managerial thinking and action. Principles help managers in effectively carrying out the organising function.

These principles are as follows:

(i) Principle of Unity of Objectives:

All organisational activities are geared towards organisational objectives. Objectives are framed for each level (top, middle and low) and each functional area. The objectives must be clearly understood by all. They should support each other at each level to attain objectives at higher levels.

(ii) Organisational Efficiency:

Organisational goals should be achieved efficiently. It means optimum (efficient) use of resources, that is, maximum output should be achieved with minimum inputs. The resources should be spread over activities in various functional areas that collectively result in maximum output through their optimum use.

(iii) Division of Labour:

Division of labour means breaking the main task into smaller units. The major task is broken into sub-tasks. This makes each person concentrate on his part of the job and perform it efficiently thereby, increasing the total output. Work should be divided and assigned to workers according to their skills. This leads to specialisation and contributes to organisational output.

(iv) Authority – Responsibility:

Authority and responsibility must go hand-in-hand. Responsibility means obligation to carry out the assigned task. To carry out this task, authority should be delegated to every person. Conversely, given the authority, the tasks assigned (responsibility) should be within the scope of authority. Authority without responsibility will result in misuse of authority and responsibility without authority will result in poor performance.

(v) Delegation:

The total work load is divided into parts. A part is assigned to subordinates and authority is given to efficiently carry out that task. Top managers delegate part of their duties to lower levels and concentrate on important organisational matters. This speeds up the organisational tasks and enables the organisation to grow in the dynamic, competitive business environment.

(vi) Scalar Chain:

Scalar chain is the line of authority running from top to lower levels. Authority flows from top to bottom in this chain and responsibilities flow from bottom to top. This chain promotes communication amongst people at different levels and facilitates decision making. Every person in the chain knows his superior and subordinate.

(vii) Span of Control:

Span of control means the number of subordinates that a superior can effectively supervise. Exact number of employees that a manager can supervise cannot be determined. It depends upon competence of managers, nature of work, system of control, capacity of subordinates etc.

However, if manager can supervise less number of workers, there will be more levels in the organisation structure and vice-versa. Supervising few subordinates creates tall structures and supervising large number of workers creates flat structures.

(viii) Unity of Command:

One subordinate should have one boss. People should receive orders from their immediate boss only. This brings discipline and order in the organisation. Receiving orders from two or more bosses can create confusion and indiscipline.

(ix) Balance:

There must be balance between different principles of organising. Balance should be maintained between centralisation and decentralisation, narrow and wide span of control etc.

(x) Flexibility:

Organisation should be flexible. Changes in structure should be made according to changes in the environmental factors.

(xi) Continuity:

Organisation should adapt to the environmental changes for its long-run survival, growth and expansion.

(xii) Exception:

Every matter should not be reported to top managers. Only significant deviations should be reported up the hierarchy. Routine matters should be dealt by middle and lower-level managers. It develops lower-level managers as they deal with simple and routine problems.

(xiii) Simplicity:

Organisation structure should be simple that can be understood by everyone. People can work efficiently in a simple structure as they are clear of various jobs and authority/ responsibility associated with those jobs. A simple structure promotes co-operation, coordination and effective communication in the organisation.

(xiv) Departmentation:

It means dividing activities into specialised groups (departments) where each department performs specialisedorganisational task. All activities of similar nature are grouped in one department headed by the departmental manager. Departments can be created on the basis of geographical locations, customers, products etc.

(xv) Decentralisation:

It means delegation of authority to lowest-level managers. It increases the decision-making authority of lower-level managers and increases organisational efficiency.

(xvi) Unity of Direction:

All activities of similar nature are grouped in one unit (production or marketing), headed by the departmental manager. He directs the efforts of departmental members towards a single objective; the departmental objective.

(xvii) Co-Operation:

All individuals and departments should co-operate and help the organisation achieve its goals. Cooperation leads to teamwork and focus on a unified goal.

Types of Organisation

he types are: 1. Line Organization 2. Line and Staff Organization 3.Functional Organization 4.Project Organization 5. Matrix Organization

Type # 1. Line Organisation:

Line organisation is the simplest and oldest form of organisation structure. It is called as military or departmental or scalar type of organization. Under this system, authority flows directly and vertically from the top of the managerial hierarchy 'down to different levels of managers and subordinates and down to the operative level of workers.

Line organisation clearly identifies authority, responsibility and accountability at each level. The personnel in Line organization are directly involved in achieving the objectives of the organization.

Type # 2. Line and Staff Organization:

This type of organization structure is in large enterprises. The functional specialists are added to the line in line and staff organization. Mere, staff is basically advisory in nature and usually does not possess any command authority over line managers. Allen has defined line and staff organization as follows.

"Line functions are those which have direct responsibility for accomplishing the objectives of the enterprises and staff refers to those elements of the organization that help the line to work most effectively in accomplishing the primary objectives of the enterprises."

Type # 3. Functional Organisation:

The functional organisation was evolved by F.W. Taylor while he was working as a foreman. He suggested eight foremen, four in factory and four in planning division as under.

Factory Division:

(i) The gang boss,

(ii) The speed boss,

(iii) The inspector, and

(iv) The maintenance or repair boss.

Planning Division:

(i) Route Clerk,
(ii) Instruction card clerk,
(iii) Time and cost clerk, and
(iv) The shop disciplinarian.

He evolved his functional organisation system, which consists in "so dividing the work of management that each man, from the assistant superintendent down, shall have as few functions as possible to perform."

According to Terry, "Functional organisation refers to the organisation which is divided into a number of functions such as finance, production, sales, personnel, office and research and development and each of functions are performed by an expert". Line authority, staff authority and functional authority as a third type of authority are in this type of organisation.

Type # 4. Project Organisation:

This organisational structure are temporarily formed for specific projects for a specific period of time, for the project of achieving the goal of developing new product, the specialists from different functional departments such as production, engineering, quality control, marketing research etc., will be drawn to work together. These specialists go back to their respective duties as soon as the project is completed.

Really, the project organisation is set-up with the object of overcoming the major weakness of the functional organisation, such as absence of unity of command, delay in decision-making, and lack of coordination.

Type # 5. Matrix Organisation:

According to Stanley Davis and Paul Lawrence matrix organisation is "any organisation that employs a multiple command system that includes not only the multiple command structure, but also related support mechanism and an associated organisational culture and behaviour pattern."

A matrix organisation, also referred to as the "multiple command system" has two chains of command. One chain of command is functional in which the flow of authority is vertical.

The second chain is horizontal depicted by a project team, which is led by the project, or group manager who is an expert in his team's assigned area of specialisation.

Authority Vs Responsibility

BASIS FOR COMPARISON	AUTHORITY	RESPONSIBILITY
Meaning	Authority refers to the power or right, attached to a particular	Responsibility denotes duty or obligation to undertake or accomplish

BASIS FOR COMPARISON	AUTHORITY	RESPONSIBILITY
	job or designation, to give orders, enforce rules, make decisions and exact compliance.	a task successfully, assigned by the senior or established by one's own commitment or circumstances.
What is it?	Legal right to issue orders.	Corollary of authority.
Results from	Formal positon in an organization	Superior-subordinate relationship
Task of manager	Delegation of authority	Assumption of responsibility
Requires	Ability to give orders.	Ability to follow orders.
Flow	Downward	Upward
Objective	To make decisions and implement it.	To execute duties, assigned by superior.
Duration	Continues for long period.	Ends, as soon as the task is accomplished.

Delegation Vs Decentralization

BASIS FOR COMPARISON	DELEGATION	DECENTRALIZATION
Meaning	Delegation means handing over an authority from one person of high level to the person of low level.	Decentralization is the final outcome achieved, when the delegation of authority is performed systematically and repeatedly to the lowest level.
What it is?	Technique of management	Philosophy of management.
Accountability	Superiors are accountable for the acts done by subordinates.	Department heads are accountable for the acts of the concerned department.
Requirement	Yes, for all organization delegation of authority is	No, it is an optional philosophy which may or may not be adopted by the

BASIS FOR COMPARISON	DELEGATION	DECENTRALIZATION
	very necessary.	organization.
Liberty of Work	Subordinates do not have full liberty.	A substantial amount of freedom is there.
Control	The ultimate control is the hands of superior.	The overall control vests with top management and delegates authority for day to day control to departmental heads.
Relationship	Creates superior-subordinate relationship.	A step towards creation of semi-autonomous units.

UNIT II

Staffing

Definition: Staffing is a managerial function which involves obtaining, utilising and retaining, qualified and competent personnel to fill all positions of an organisation, from top to operative echelon. In finer terms, staffing is placing the right person at the right job.

Importance of Staffing

- It helps in the finding out efficient and effective workforce, to fill different posts in the organisation.
- It improves organisation's performance and productivity by appointing the right person at the right job.
- It facilitates in identifying the staffing requirements of the organisation in future.
- It ensures continuous survival and growth of the organisation, by way of succession planning for executives.
- It develops personnel to take up top managerial positions of the organisation.
- It ensures training and development of the people working in the organisation.
- It assists the organisation in making the optimum use of human resources.

Therefore, staffing increases employee morale and job satisfaction. Further, it helps the top management in ascertaining the manpower requirement resulting from a promotion, transfer, employee turnover, retirement, etc. of the existing employees.

Motivation: Meaning, Definition, Nature and Types

Meaning:

Motivation is an important factor which encourages persons to give their best performance and help in reaching enterprise goals. A strong positive motivation will enable the increased output of employees but a negative motivation will reduce their performance. A key element in personnel management is motivation.

According to Likert, "It is the core of management which shows that every human being gives him a sense of worth in face-to face groups which are most important to him….A supervisor should strive to treat individuals with dignity and a recognition of their personal worth."

Nature of Motivation:

Motivation is a psychological phenomena which generates within an individual. A person feels the lack of certain needs, to satisfy which he feels working more. The need satisfying ego motivates a person to do better than he normally does.

From definitions given earlier the following inferences can be derived:

1. Motivation is an inner feeling which energizes a person to work more.
2. The emotions or desires of a person prompt him for doing a particular work.
3. There are unsatisfied needs of a person which disturb his equilibrium.
4. A person moves to fulfill his unsatisfied needs by conditioning his energies.
5. There are dormant energies in a person which are activated by channelizing them into actions.

Types of Motivation:

When a manager wants to get more work from his subordinates then he will have to motivate them for improving their performance. They will either be offered incentive for more work, or may be in the space of rewards, better reports, recognition etc., or he may instill fear in them or use force for getting desired work.

The following are the types of motivation:

1. Positive Motivation:

Positive motivation or incentive motivation is based on reward. The workers are offered incentives for achieving the desired goals. The incentives may be in the shape of more pay, promotion, recognition of work, etc. The employees are offered the incentives and try to improve their performance willingly.

According to Peter Drucker, the real and positive motivators are responsible for placement, high standard of performance, information adequate for self- control and the participation of the worker as a responsible citizen in the plant community. Positive motivation is achieved by the co-operation of employees and they have a feeling of happiness.

2. Negative Motivation:

Negative or fear motivation is based on force or fear. Fear causes employees to act in a certain way. In case, they do not act accordingly then they may be punished with demotions or lay-offs. The fear acts as a push mechanism. The employees do not willingly co-operate, rather they want to avoid the punishment.

Though employees work up-to a level where punishment is avoided but this type of motivation causes anger and frustration. This type of motivation generally becomes a cause of industrial unrest. In spite of the drawbacks of negative motivation, this method is commonly used to achieve desired results. There may be hardly any management which has not used negative motivation at one or the other time.

Importance of Motivation in an Organisation.

The process of motivation plays a very important role in any organisation, profit or non-profit. The managerial process of direction is driven primarily by the process of motivation as it creates within the mind of an employee the desire to work in the direction determined by the manager. The following aspects may be considered under this head:

- Increases Productivity: Motivation as a process leads to an increase in productivity of the employee. Motivation meets the needs of the employee and thereby creates the drive to work at the best of his abilities. A well-employee will be willing to put in more effort towards the betterment of the organisation than another disheartened employee.

- Ensures Organisational Efficiency: Motivation plays an important role in changing the attitudes of the employees in the organisation. Indifferent attitude is extinguished most efficiently by motivation. The presence of such favorable attitude allows the organisation to thrive and be successful.

- Ensures Loyal Workforce: A well-motivated workforce is a loyal workforce. Motivated employees have high levels of morale and commitment towards the organisation and its goals and objectives. Motivation thus reduces employee turnover and reduces the need for constant induction of new employees.

- Ensures a Reactive Workforce: Adapting to changing business environments is an important feature of any successful business. In order to react to changes easily and to continue smooth functioning, an organisation requires extensive loyalty and commitment of its employees. This reduces resistance to the changes that the organisation intends to make. This in effect makes the organisation efficient in adapting to changing needs.

- Facilitates Direction: Direction is an important managerial function and forms one of its core function. Motivation as already mentioned is a vital part of direction. Direction being a process that involves directing or initiating action according to a plan drawn up requires the employees to work wholeheartedly with commitment and loyalty. The process of direction is thus possible only when the employees proceed in the direction that the manager determines and this requires a motivated workforce.

THEORIES OF MOTIVATION

Motivation is a state-of-mind, filled with energy and enthusiasm, which drives a person to work in a certain way to achieve desired goals. Motivation is a force which pushes a person to work with high level of commitment and focus even if things are against him. Motivation translates into a certain kind of human behaviour.

It is important to ensure that every team member in an organization is motivated. Various psychologists have studied human behaviour and have formalized their findings in the form various motivation theories. These motivation theories provide great understanding on how people behave and what motivates them.

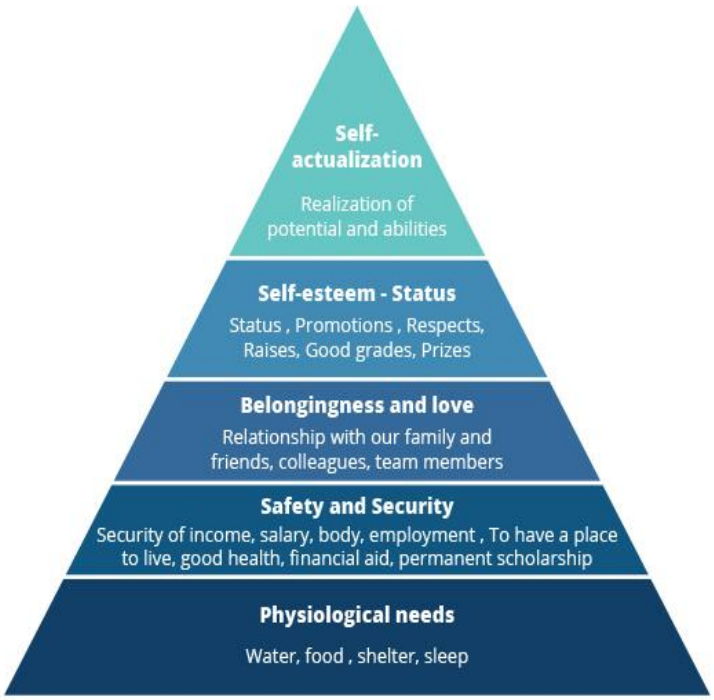
Motivation is a huge field of study. There are many theories of motivation. Some of the famous motivation theories include the following:

1. Maslow's hierarchy of needs

Abraham Maslow postulated that a person will be motivated when his needs are fulfilled. The need

starts from the lowest level basic needs and keeps moving up as a lower level need is fulfilled. Below is the hierarchy of needs:

- Physiological: Physical survival necessities such as food, water, and shelter.
- Safety: Protection from threats, deprivation, and other dangers.
- Social (belongingness and love): The need for association, affiliation, friendship, and so on.
- Self-esteem: The need for respect and recognition.
- Self-actualization: The opportunity for personal development, learning, and fun/creative/challenging work. Self-actualization is the highest level need to which a human being can aspire.



The leader will have to understand the specific need of every individual in the team and accordingly work to help fulfil their needs.

Herzberg's Motivation-Hygiene Theory

American psychologist and business management expert Frederick Herzberg's theory of motivation was developed in the 1950s-1960s as a way to understand employee motivation and satisfaction. Through his research, Herzberg identified factors repeatedly linked to satisfaction and dissatisfaction (otherwise known as hygiene factors).

The factors for satisfaction are:

- Achievement and recognition
- The work itself
- Responsibility
- Advancement and growth

The hygiene factors are:

- Company policies
- Supervision
- Relationship for supervisor and peers
- Work conditions
-
- Salary and status
- Security

The hygiene factors are mainly attributed to the workspace environment and what kind of constraints are put around the employees. Through these findings, Herzberg concluded that the most motivation creation occurs not just when hygiene factors are in order, but when hygiene factors are adequately addressed and there is great focus on satisfaction factors such as achievement and recognition. Put more simply, employees perform at their highest level when the work environment is healthy and they feel like they are achieving success and rewards in their job.

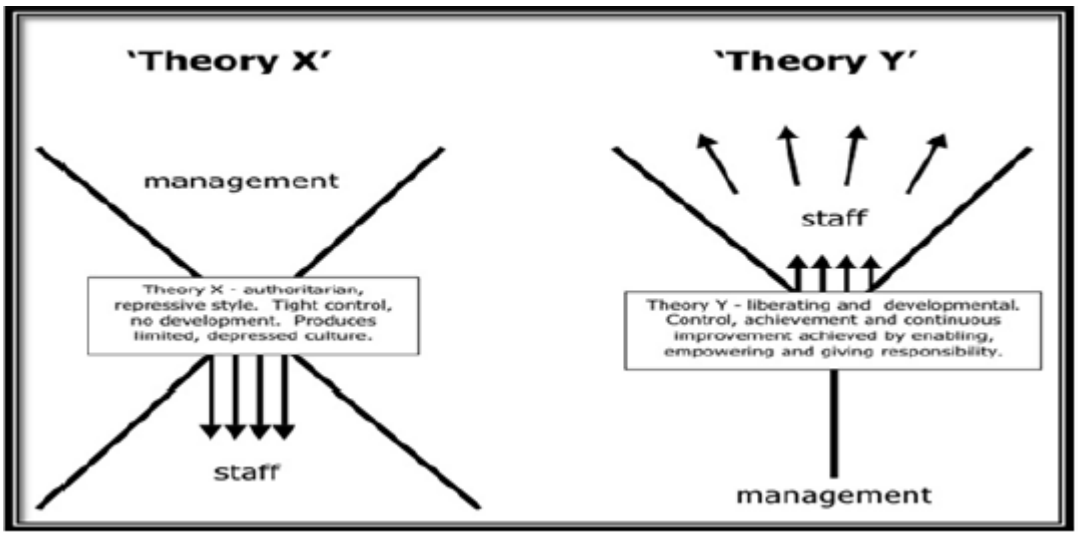
If you connect to this theory of motivation, then you may wish to focus on finding a work environment that satisfies all of these needs as you work toward achieving happiness inside and outside of your career.

Theory X and theory Y

Our management style is firmly influenced by our beliefs and assumptions about what encourages members of our team like: If we believe that our team members dislike work, then we tend towards an authoritarian style of management. However, if we assume that employees take pride in doing a good job, we tend to adopt a more participative style.

Douglas McGregor, the eminent social psychologist, divides management style into two contrasting theories –

- Theory X
- Theory Y



Theory X

This theory believes that employees are naturally unmotivated and dislike working, and this encourages an authoritarian style of management. According to this theory, management must firmly intervene to get things done. This style of management concludes that workers –

- Disfavor working.
- Abstain responsibility and the need to be directed.
- Need to be controlled, forced, and warned to deliver what's needed.
- Demand to be supervised at each and every step, with controls put in place.
- Require to be attracted to produce results, else they have no ambition or incentive to work.

McGregor observed that X-type workers are in fact mostly in minority, and yet in mass organizations, such as large scale production environment, X Theory management may be needed and can be unavoidable.

Theory Y

This theory explains a participative style of management, that is, distributive in nature. It concludes that employees are happy to work, are self-motivated and creative, and enjoy working with greater responsibility. It estimates that workers –

- Take responsibility willingly and are encouraged to fulfill the goals they are given.
- Explore and accept responsibility and do not need much guidance.
- Assume work as a natural part of life and solve work issues imaginatively.

In Y-type organizations, people at lower levels are engaged in decision making and have more responsibility.

Comparing Theory X & Theory Y

Let us now compare both the theories –

Motivation

Theory X considers that people dislike work, they want to avoid it and do not take responsibilities willingly.

While, Theory Y considers that people are self-motivated, and sportingly take responsibilities.

Management Style and Control

In Theory X-type organization, management is authoritarian, and centralized control is maintained.

While in Theory Y-type organization, the management style is participative, employees are involved decision making, but the power retains to implement decisions.

Work Organization

Theory X employees are specialized and the same work cycle continues.

In Theory Y, the work tends to be coordinated around wider areas of skill or knowledge. Employees are also motivated to develop expertise, and make suggestions and improvements.

Rewards and Appraisals

Theory X-type organizations work on a 'carrot and stick' basis, and performance assessment is part of the overall mechanism of control and compensation.

Coming to Theory Y-type organizations, appraisal is also regular and crucial, but is usually a separate mechanism from organizational controls. Theory Y-type organizations provide employees frequent opportunities for promotion.

Application

Admitting the fact that Theory X management style is widely accepted as inferior to others, it has its place in large scale production procedure and unskilled production-line work.

Many of the principles of Theory Y are widely accepted by different types of organization that value and motivate active participation.

Theory Y-style management is appropriate for knowledge work and licensed services. Licensed service organizations naturally develop Theory Y-type practices by the nature of their work, even high structure knowledge framework, like call center operations, benefit from its principles to motivate knowledge sharing and continuous improvement.

Definitions of Leadership:

"Leadership is both a process and property. The process of leadership is the use of non coercive influence to direct and coordinate the activities of the members of an organised group towards the accomplishment of group objectivities. As a property, leadership is the set of qualities or characteristics attributed to those who are perceived to successfully employ such influence." Gay and Strake

"Leadership is the activity of influencing people to strive willingly for group objectives." George Terry

Features of Leadership:

(i) Leadership is a process of influencing people.

(ii) It aims at bringing changes in behaviour of people.

(iii) It is a never ending or a continuous process.

(iv) Leadership is practiced to achieve organisational goals.

(v) It explains the relations between leaders and followers.

Importance of Leadership:

Leadership is an important factor in the success of an organisation. A leader not only provides information about organizational goals but also pools the required resources, guides and motivates his followers for achieving the organisational goals.

1. Influences the Behaviour of People:

Leadership involves influencing the behaviour of the people and making them contribute their full efforts for the good of an organisation.

(ii) Handles Conflicts:

A good leader helps in solving the conflicts among his followers and also removes their negative feelings.

(iii) Maintains Coordination:

A leader always maintains personal relations with his followers and provide them the required confidence, support and encouragement. This helps in creating healthy working environment.

(iv) Introduces Changes:

A good leader helps in solving the problem of resistance to changes by inspiring and persuading them to accept the changes without any discontentment.

(v) Provides Training:

A leader also makes arrangement for the training of his subordinates.

Traits of a leader

A leader has got multidimensional traits in him which makes him appealing and effective in behavior. The following are the requisites to be present in a good leader:

1. Physical appearance- A leader must have a pleasing appearance. Physique and health are very important for a good leader.
2. Vision and foresight- A leader cannot maintain influence unless he exhibits that he is forward looking. He has to visualize situations and thereby has to frame logical programmes.
3. Intelligence- A leader should be intelligent enough to examine problems and difficult situations. He should be analytical who weighs pros and cons and then summarizes the situation. Therefore, a positive bent of mind and mature outlook is very important.

4. Communicative skills- A leader must be able to communicate the policies and procedures clearly, precisely and effectively. This can be helpful in persuasion and stimulation.
5. Objective- A leader has to be having a fair outlook which is free from bias and which does not reflects his willingness towards a particular individual. He should develop his own opinion and should base his judgement on facts and logic.
6. Knowledge of work- A leader should be very precisely knowing the nature of work of his subordinates because it is then he can win the trust and confidence of his subordinates.
7. Sense of responsibility- Responsibility and accountability towards an individual's work is very important to bring a sense of influence. A leader must have a sense of responsibility towards organizational goals because only then he can get maximum of capabilities exploited in a real sense. For this, he has to motivate himself and arouse and urge to give best of his abilities. Only then he can motivate the subordinates to the best.
8. Self-confidence and will-power- Confidence in himself is important to earn the confidence of the subordinates. He should be trustworthy and should handle the situations with full will power. (You can read more about Self-Confidence at : Self Confidence - Tips to be Confident and Eliminate Your Apprehensions).
9. Humanist-This trait to be present in a leader is essential because he deals with human beings and is in personal contact with them. He has to handle the personal problems of his subordinates with great care and attention. Therefore, treating the human beings on humanitarian grounds is essential for building a congenial environment.
10. Empathy- It is an old adage "Stepping into the shoes of others". This is very important because fair judgement and objectivity comes only then. A leader should understand the problems and complaints of employees and should also have a complete view of the needs and aspirations of the employees. This helps in improving human relations and personal contacts with the employees.

From the above qualities present in a leader, one can understand the scope of leadership and it's importance for scope of business. A leader cannot have all traits at one time. But a few of them helps in achieving effective results.

Likert's Four Systems of Management

Definition: RensisLikert along with his associates in Michigan University, USA conducted research to study the patterns and styles of managers over three decades, across 200 organizations and developed a four-fold model of the management system that helped in understanding the leadership behavior.

1. Exploitative Authoritative System: In this type of management system, the responsibility lies with the people in higher positions in the hierarchy. Here, the subordinates are not involved in the decision-making process. The superior has no trust and confidence in his subordinate and imposes decisions on him leaving no room for further discussions.In this system, the communication flows downwards, i.e. from the superior to the subordinate and hence there is a lack of communication

and teamwork. The management is only concerned with the completion of work; it uses any means or threats to get the work completed through the subordinates.

2. Benevolent Authoritative System: Like exploitative authoritative system, here also the responsibility lies with the people at the upper echelons of the hierarchy and the only difference is that the motivation is based on the rewards, not on fear and threat. The superior has that much trust and confidence in his subordinates which is required in a master-servant relationship.In this system, the subordinates are given rewards for their participation and the communication may flow upwards i.e. from subordinate to superior, but restricted to what the superior wants to hear. Thus, in the benevolent authoritative system also, the subordinates do not feel free to discuss job-related issues with the superior. This results in the lack of communication and a little teamwork.
3. Consultative System: In this management system, the superior has substantial but not complete, trust and confidence in his subordinates and constructively uses the views and opinions given by them. Here, the motivation is based on rewards and the amount of the individual's involvement in the decision-making process.The consultative system is characterized by a great flow of information both horizontally and vertically. The subordinates feel free to discuss job-related issues with the superiors and hence, the upward flow of communication is more into the consultative system than a benevolent system. But still, the decisions are made by the senior people in the hierarchy.
4. Participative System: In the participative system, the management has full confidence in his subordinates and encourages them to participate actively in the decision-making process. Here, the subordinate feels absolutely free to discuss any issue related to a job with his superior. This system is characterized by a good teamwork and teams are linked with people, who are the members of more than one team and such people are called as "linking pins". The subordinates get motivated through rewards for their participation in the decision-making process.

With these four systems of management, Likert studied seven variables Viz. Leadership, motivation, decision-making process, communication, interaction-influence, control process and goal setting.

Tannenbaum and Schmidt Continuum model

Tannenbaum and Schmidt Continuum model shows the relationship between the levels of freedom that a manager chooses to give to a team, and the level of authority used by the manager. As we already discussed in Situational leadership, number of parameters goes into choosing the managerial style: manager's competence, subordinate's developmental level, the situation.

Tannenbaum& Schmidt defined 7 levels of delegated freedom which moves from manager-oriented to subordinate-oriented. As team develops, level moves from one to the next – the area of freedom increases and the need for manager's intervention decreases. Following levels are self-explanatory and easy to understand:

1. Manager takes decision and announces it – only manager plays the decision-making role; no team involvement

2. Manager decides and then "Sells" his decision to the team – no change in decision; but team may raise some concerns

3. Manager presents decision with background ideas for the decision and invite questions – team

knows what options manager considered for his decision; more team involvement

4. Manager suggests provisional decision & invites discussion regarding the decision – team can have a say on manager's decision; it can be changed based on discussion
5. Manager presents the problem or situation, get suggestions, then decides – team is free to come up with options; manager decides on those options
6. Manager explains the situation or problem, defines the parameters and asks team to decide on the solution – manager delegated whole thing to the team; but still manager is accountable for the outcome
7. Manager allows team to develop options and decide on the action, within the manager's received limit – complete freedom level; team does all the work almost as what the manager does at level 1.

The main advantage of this theory: for leaders/managers – it defines the criteria for involvement and delegation & range of choices for the involvement.

Controlling

Definition: Control is a primary goal-oriented function of management in an organisation. It is a process of comparing the actual performance with the set standards of the company to ensure that activities are performed according to the plans and if not then taking corrective action.

Every manager needs to monitor and evaluate the activities of his subordinates. It helps in taking corrective actions by the manager in the given timeline to avoid contingency or company's loss. Controlling is performed at the lower, middle and upper levels of the management.

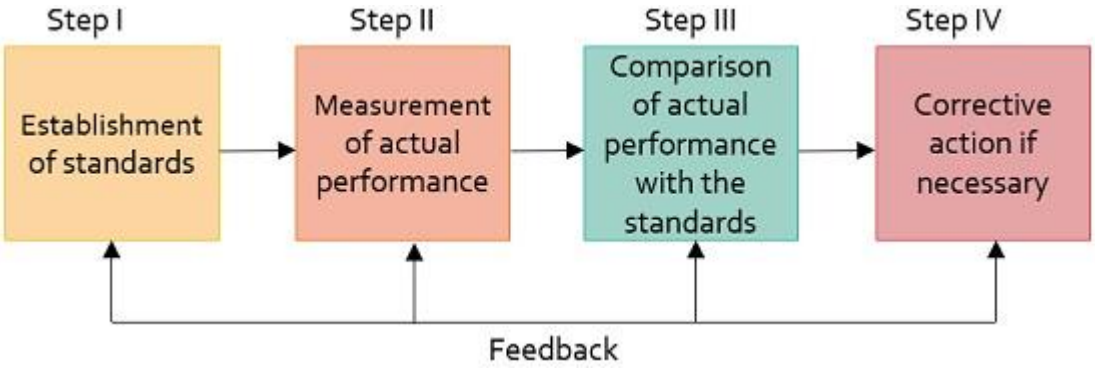
Features of Controlling

- An effective control system has the following features:
- It helps in achieving organizational goals.
- Facilitates optimum utilization of resources.
- It evaluates the accuracy of the standard.
- It also sets discipline and order.
- Motivates the employees and boosts employee morale.
- Ensures future planning by revising standards.
- Improves overall performance of an organization.
- It also minimises errors.

Controlling and planning are interrelated for controlling gives an important input into the next planning cycle. Controlling is a backwards-looking function which brings the management cycle back to the planning function. Planning is a forward-looking process as it deals with the forecasts about the future conditions.

Process of Controlling

Control process involves the following steps as shown in the figure:



- Establishing standards: This means setting up of the target which needs to be achieved to meet organisational goals eventually. Standards indicate the criteria of performance.

  Control standards are categorized as quantitative and qualitative standards. Quantitative standards are expressed in terms of money. Qualitative standards, on the other hand, includes intangible items.

- Measurement of actual performance: The actual performance of the employee is measured against the target. With the increasing levels of management, the measurement of performance becomes difficult.

- Comparison of actual performance with the standard: This compares the degree of difference between the actual performance and the standard.

- Taking corrective actions: It is initiated by the manager who corrects any defects in actual performance.

Controlling process thus regulates companies' activities so that actual performance conforms to the standard plan. An effective control system enables managers to avoid circumstances which cause the company's loss.

Types of control

There are three types of control viz.,

1. Feedback Control: This process involves collecting information about a finished task, assessing that information and improvising the same type of tasks in the future.
2. Concurrent control: It is also called real-time control. It checks any problem and examines it to take action before any loss is incurred. Example: control chart.
3. Predictive/ feedforward control: This type of control helps to foresee problem ahead of occurrence. Therefore action can be taken before such a circumstance arises.

In an ever-changing and complex environment, controlling forms an integral part of the organization.

Advantages of controlling

- Saves time and energy

- Allows managers to concentrate on important tasks. This allows better utilization of the managerial resource.
- Helps in timely corrective action to be taken by the manager.
- Managers can delegate tasks so routinely chores can be completed by subordinates.

On the contrary, controlling suffers from the constraint that the organization has no control over external factors. It can turn out to be a costly affair, especially for small companies.

Techniques of Managerial Control: Traditional and Modern Techniques

1. Traditional Techniques:

Traditional techniques refer to the techniques that have been used by business organisation for longer period of time and are still in use.

Such techniques are:

a. Personal Observation

b. Statistical Reports.

c. Breakeven Analysis.

d. Budgetary Control.

2. Modern Techniques:

Modem techniques are those techniques which are very new in management world. These techniques provide various new aspects for controlling the activities of an organisation.

These techniques are as follows:

(a) Return on Investment.

(b) Ratio Analysis.

(c) Responsibility Accounting.

(d) Management Audit.

(e) PERT and CPM.

(f) Management Information System.

Effective Organizational Control Systems

The management of any organization must develop a control system tailored to its organization's goals and resources. Effective control systems share several common characteristics. These characteristics are:

- A focus on critical points. For example, controls are applied where failure cannot be tolerated or where costs cannot exceed a certain amount. The critical points include all the areas of an organization's operations that directly affect the success of its key operations.

- Integration into established processes. Controls must function harmoniously within these processes and should not bottleneck operations.
- Acceptance by employees. Employee involvement in the design of controls can increase acceptance.
- Availability of information when needed. Deadlines, time needed to complete the project, costs associated with the project, and priority needs are apparent in these criteria. Costs are frequently attributed to time shortcomings or failures.
- Economic feasibility. Effective control systems answer questions such as, "How much does it cost?" "What will it save?" or "What are the returns on the investment?" In short, comparison of the costs to the benefits ensures that the benefits of controls outweigh the costs.
- Accuracy. Effective control systems provide factual information that's useful, reliable, valid, and consistent.

- Comprehensibility. Controls must be simple and easy to understand.

Unit III

Organizational Behavior

Organizational Behavior (OB) can be defined as the understanding, prediction and management of human behavior both individually or in a group that occur within an organization.

Internal and external perspectives are the two theories of how organizational behavior can be viewed from an organization's point of view. In this tutorial, we will be learning in detail about both the theories.

Importance of OB

While working in an organization, it is very important to understand others behavior as well as make others understand ours. In order to maintain a healthy working environment, we need to adapt to the environment and understand the goals we need to achieve. This can be done easily if we understand the importance of OB.

Following points bring out the importance of OB –

- It helps in explaining the interpersonal relationships employees share with each other as well as with their higher and lower subordinates.
- The prediction of individual behavior can be explained.
- It balances the cordial relationship in an enterprise by maintaining effective communication.
- It assists in marketing.
- It helps managers to encourage their sub-ordinates.
- Any change within the organization can be made easier.
- It helps in predicting human behavior & their application to achieve organizational goals.

- It helps in making the organization more effective.

There are three major factors that affect OB. The working environment being the base for all three factors, they are also known as the determinants of OB. The three determinants are –

- People
- Structure
- Technology

People

An organization consists of people with different traits, personality, skills, qualities, interests, background, beliefs, values and intelligence. In order to maintain a healthy environment, all the employees should be treated equally and be judged according to their work and other aspects that affects the firm.

Example – A company offers campus placement to trainees from different states like Orissa, Haryana, Arunachal Pradesh and many more. However, during and after training, all trainees are examined only on the basis of their performance in the tasks assigned.

Organizational Structure

Structure is the layout design of an organization. It is the construction and arrangement of relationships, strategies according to the organizational goal.

Example – Organizational structure defines the relation of a manager with employees and co-workers.

Technology

Technology can be defined as the implementation of scientific knowledge for practical usage. It also provides the resources required by the people that affect their work and task performance in the right direction.

Example – Introduction of SAP, big data and other software in the market determines individual and organizational performance.

Environment

All companies function within a given internal and external environment. Internal environment can be defined as the conditions, factors, and elements within an enterprise that influences the activities, choices made by the firm, and especially the behavior of the employees. While external environment can be defined as outside factors that affect the company's ability to operate. Some of them can be manipulated by the company's marketing, while others require the company to make adjustments.

Some examples of internal environment include employee morale, culture changes, financial changes or issues, and some examples of external environment include political factors, changes to the economy and the company itself.

The concept of OB is based on two key elements namely –

- Nature of people
- Nature of the organization

Nature of People

In simple words, nature of people is the basic qualities of a person, or the character that personifies an individual they can be similar or unique. Talking at the organizational level, some major factors affecting the nature of people have been highlighted. They are –

- Individual Difference – It is the managerial approach towards each employee individually, that is one-on-one approach and not the statistical approach, that is, avoidance of single rule. Example– Manager should not be biased towards any particular employee rather should treat them equally and try not to judge anyone on any other factor apart from their work.
- Perception – It is a unique ability to observe, listen and conclude something. It is believing in our senses. In short, the way we interpret things and have our point of view is our perception. Example – Aman thinks late night parties spoil youth while Anamika thinks late night parties are a way of making new friends. Here we see both Aman and Anamika have different perception about the same thing.
- A whole person – As we all know that a person's skill or brain cannot be employed we have to employee a whole person. Skill comes from background and knowledge. Our personal life cannot be totally separated from our work life, just like emotional conditions are not separable from physical conditions. So, people function is the functioning of a total human being not a specific feature of human being.
- Motivated behavior – It is the behavior implanted or caused by some motivation from some person, group or even a situation. In an organization, we can see two different types of motivated employees –
    - Positive motivation – Encouraging others to change their behavior or say complete a task by luring them with promotions or any other profits. Example – "If you complete this, you will gain this."
    - Negative motivation – Forcing or warning others to change their behavior else there can be serious consequences. Example – "If you don't complete this, you will be deprived from the office."
- Value of person – Employees want to be valued and appreciated for their skills and abilities followed by opportunities which help them develop themselves.

Nature of Organization

Nature of organization states the motive of the firm. It is the opportunities it provides in the global market. It also defines the employees' standard; in short, it defines the character of the company by acting as a mirror reflection of the company. We can understand the nature of any firm with its social system, the mutual interest it shares and the work ethics.

Let us take a quick look at all these factors –

- Social system – Every organization socializes with other firms, their customers, or simply the outer world, and all of its employees - their own social roles and status. Their behavior is mainly influenced by their group as well as individual drives. Social system are of two types namely –
    - Formal – Groups formed by people working together in a firm or people that belong to the same club is considered as formal social system. Example – A success party after getting a project.
    - Informal – A group of friends, people socializing with others freely, enjoying, partying or chilling. Example – Birthday party.
- Mutual interest – Every organization needs people and people need organizations to survive and prosper. Basically it's a mutual understanding between the organization and the employees that helps both reach their respective objectives. Example – We deposit our money in the bank, in return the bank gives us loan, interest, etc.
- Ethics – They are the moral principles of an individual, group, and organization. In order to attract and keep valuable employees, ethical treatment is necessary and some moral standards need to be set. In fact, companies are now establishing code of ethics training reward for notable ethical behavior.
- In a very broad sense, the scope of OB is the extent to which it can govern or influence the operations of an organization. The scope of OB integrates 3 concepts respectively –
- Individual Behavior
- It is the study of individual's personality, learning, attitudes, motivation, and job satisfaction. In this study, we interact with others in order to study about them and make our perception about them.
- Example – The personal interview round is conducted to interact with candidates to check their skills, apart from those mentioned in the resume.
- Inter-individual Behavior
- It is the study conducted through communication between the employees among themselves as well as their subordinates, understanding people's leadership qualities, group dynamics, group conflicts, power and politics.
- Example – A meeting to decide list of new board members.
- Group Behavior
- Group behavior studies the formation of organization, structure of organization and effectiveness of organization. The group efforts made towards the achievement of organization's goal is group behavior. In short, it is the way how a group behaves.
- Example – Strike, rally etc.

Functions of a manager are the various roles played by the manager in an organization. A manager is accountable for all the happenings in the firm and is answerable to the management. The seven major roles played by the manager are –

- Planning
- Organizing
- Staffing
- Directing/leading
- Coordinating
- Reporting
- Budgeting
- Controlling

Various Challenges of a Manager

We have seen the different roles a manager as to play in order to maintain the workflow balance in an organization. With all these responsibilities, there are some tough challenges a manager has to deal with while trying to balance everything. Following are some challenges a manager has to deal with –

- Managing workforce diversity – Manager shouldn't create or encourage discrimination among employees. Employees from different background, culture, and ethnicity should be treated as equal and rewards should be given only on the basis of work.
- Improving quality and productivity – It is the sole responsibility of the manager to increase the productivity without hampering the quality. It can be done in two ways –
    - Totally quality management – That is constant focus on customer satisfaction by improving organizational process.
    - Process of engineering – Focusing on the manufacturing of the product, so that the quality is not compromised.
- Responding to labor storage – If there is a labor shortage then the manager should quickly respond to solve this problem by arranging for the workforce required so that the product delivery is not delayed.
- Eradication of labor shortage – The manager needs to take quick action, if there is a labor shortage and should assure with backup plans so that there is no labor shortage in future.
- Improving customer service – Manager faces the challenge to constantly improve customer service to survive in an ever-competitive environment.
- Improving ethical behavior – Managers should make sure that the employees behave properly and maintain the decorum of the company. These are few major challenges a manager faces while trying to complete a project. To maintain work-life balance and for the

betterment of the organization, the manager should try level best to resolve these challenges.

- Organizational behavior reflects the behavior of the people and management all together, it is considered as field study not just a discipline. A discipline is an accepted science that is based upon theoretical foundation, whereas OB is an inter-disciplinary approach where knowledge from different disciplines like psychology, sociology, anthropology, etc. are included. It is used to solve organizational problems, especially those related to human beings.
- There are four different types of models in OB. We will throw some light on each of these four models.
- Autocratic Model
- The root level of this model is power with a managerial orientation of authority. The employees in this model are oriented towards obedience and discipline. They are dependent on their boss. The employee requirement that is met is subsistence. The performance result is less.
- The major drawbacks of this model are people are easily frustrated, insecurity, dependency on the superiors, minimum performance because of minimum wage.
- Custodial Model
- The root level of this model is economic resources with a managerial orientation of money. The employees in this model are oriented towards security and benefits provided to them. They are dependent on the organization. The employee requirement that is met is security.
- This model is adapted by firms having high resources as the name suggest. It is dependent on economic resources. This approach directs to depend on firm rather than on manager or boss. They give passive cooperation as they are satisfied but not strongly encouraged.
- Supportive Model
- The root level of this model is leadership with a managerial orientation of support. The employees in this model are oriented towards their job performance and participation. The employee requirement that is met is status and recognition. The performance result is awakened drives.
- This model is dependent on leadership strive. It gives a climate to help employees grow and accomplish the job in the interest of the organization. Management job is to assist the employee's job performance. Employees feel a sense of participation.
- Collegial Model
- The root level of this model is partnership with a managerial orientation of teamwork. The employees in this model are oriented towards responsible behavior and self-discipline. The

employee requirement that is met is self-actualization. The performance result is moderate zeal.

- This is an extension of supportive model. The team work approach is adapted for this model. Self-discipline is maintained. Workers feel an obligation to uphold quality standard for the better image of the company. A sense of "accept" and "respect" is seen.

Individual and interpersonal behaviour

Individual- Knowing yourself and managing behavior

- The ability to make decisions and manage perceptions is essential for achieving social and business success. Cultivating self-awareness is important in navigating career paths. By knowing yourself, your strengths and weaknesses, values, biases, and perceptions, you are best able to put your right foot forward, work in-sync with coworkers, manage and guide direct reports, project success to your superiors, and gauge how you can better perform and ascend the corporate ladder.
- Self-awareness and management also leads to recognition of biases and perception. Perception is a process in which an individual organizes and interprets their sensory impressions to give meaning to their environment (According to Essentials of Organizational Behavior, Perception and Individual Decision Making book). This plays a big role in how we think. Knowing and understanding implicit biases may also help you recognize certain patterns or inclinations. Background and upbringing also factor into our thought-processes, perceptions, and biases. We attribute behavior and outcomes to internal (person or dispositional) and external (situational) causes and motives.
- Interpersonal- Associations between two or more people
- Interpersonal relationships are developed through verbal and nonverbal communication. Strong interpersonal skills are characterized through an ability to influence and persuade (sometimes described as charisma), but also hinges on cultural understanding and global awareness.
- In a business context, the term interpersonal relationship refers to how people communicate and interact within their organization. The ability to influence and communicate is sometimes regarded as innate, but for most of us, it is something that requires hard work to strengthen as we grow. Learning about interpersonal theory, which is the study of characteristics, traits, and patterns, is an effective tool for managing day-to-day interactions.

Personality

The word personality is derived from a Greek word "persona" which means "to speak through." Personality is the combination of characteristics or qualities that forms a person's unique identity. It signifies the role which a person plays in public. Every individual has a unique, personal and major determinant of his behavior that defines his/her personality.

Personality trait is basically influenced by two major features –

- Inherited characteristics
- Learned characteristics

Inherited Characteristics

The features an individual acquires from their parents or forefathers, in other words the gifted features an individual possesses by birth is considered as inherited characteristics. It consists of the following features –

- Color of a person's eye
- Religion/Race of a person
- Shape of the nose
- Shape of earlobes

Learned Characteristics

Nobody learns everything by birth. First, our school is our home, then our society, followed by educational institutes. The characteristics an individual acquires by observing, practicing, and learning from others and the surroundings is known as learned characteristics.

Learned characteristics includes the following features –

- Perception – Result of different senses like feeling, hearing etc.
- Values – Influences perception of a situation, decision making process.
- Personality – Patterns of thinking, feeling, understanding and behaving.
- Attitude – Positive or negative attitude like expressing one's thought.

Traits of Personality

Personality traits are the enduring features that define an individual's behavior. A personality trait is a unique feature in an individual. Psychologists resolved that there are five major personality traits and every individual can be categorized into at least one of them. These five personality traits are –

- Extrovert
- Neurotic
- Open
- Agreeable
- Conscientious

Major Personality Attributes

Following are the five major personality attributes that influence OB –

Locus of Control

Locus of control is the center of control of an individual's code of conduct. People can be grouped into two categories i.e., internals and externals respectively.

People who consider themselves as the masters of their own fates are known as internals, while, those who affirm that their lives are controlled by outside forces known as externals.

Before making any decision, internals actively search for information, they are achievement driven, and want to command their environment. Thus, internals do well on jobs that craves complex information processing, taking initiative and independent action.

Externals, on the other hand, are more compliant, more willing to follow instructions, so, they do well in structured, routine jobs.

Machiavellianism

Machiavellianism is being practical, emotionally distant, and believing that ends justify means.

Machiavellians are always wanting to win and are great persuaders. Here are the significant features of a high-mach individuals –

- High-Machs prefer precise interactions rather than beating about the bush.
- High-Machs tend to improvise; they do not necessarily abide by rules and regulations all the time.
- High-Machs get distracted by emotional details that are irrelevant to the outcome of a project.

Self-esteem

It is the extent up to which people either like or dislike themselves. Self-Esteem is directly related to the expectations of success and on-the-job satisfaction.

Individuals with high self-esteem think that they have what it takes to succeed. So, they take more challenges while selecting a job.

On the other hand, individuals with low self-esteem are more susceptible to external distractions. So, they are more likely to seek the approval of others and to adapt the beliefs and behaviors of those they respect.

Self-monitoring

Self-monitoring is the capability of regulating one's behavior according to social situations. Individuals with high self-monitoring skill easily adjust their behavior according to external, situational factors. Their impulsive talents allow them to present public personae which are completely different from their private personalities.

However, people with low self-monitoring skills cannot cover themselves. Regardless of any situation, they are always themselves. They have an attitude of, "what you see is what you get."

Risk taking

Generally, managers are reluctant on taking risks. However, individual risk-taking inclination affects the bulk of information required by the managers and how long it takes them to make decisions.

Thus, it is very important to recognize these differences and align risk-taking propensity with precise job demands that can make sense.

Perception

Perception is an intellectual process of transforming sensory stimuli to meaningful information. It is the process of interpreting something that we see or hear in our mind and use it later to judge and give a verdict on a situation, person, group etc.

It can be divided into six types –

- Of sound – The ability to receive sound by identifying vibrations.
- Of speech – The competence of interpreting and understanding the sounds of language heard.
- Touch – Identifying objects through patterns of its surface by touching it.
- Taste – The ability to receive flavor of substances by tasting it through sensory organs known as taste buds.
- Other senses – They approve perception through body, like balance, acceleration, pain, time, sensation felt in throat and lungs etc.
- Of the social world – It permits people to understand other individuals and groups of their social world. Example – Priya goes to a restaurant and likes their customer service, so she will perceive that it is a good place to hang out and will recommend it to her friends, who may or may not like it. Priya's perception about the restaurant is good.

Perceptual Process

Perceptual process are the different stages of perception we go through. The different stages are –

- Receiving
- Selecting
- Organizing
- Interpreting

Receiving

Receiving is the first and most important stage in the process of perception. It is the initial stage in which a person collects all information and receives the information through the sense organs.

Selecting

Selecting is the second stage in the process. Here a person doesn't receive the data randomly but selectively. A person selects some information out of all in accordance with his interest or needs. The selection of data is dominated by various external and internal factors.

- External factors – The factors that influence the perception of an individual externally are intensity, size, contrast, movement, repetition, familiarity, and novelty.
- Internal factors – The factors that influence the perception of an individual internally are psychological requirements, learning, background, experience, self-acceptance, and interest.

Organizing

Keeping things in order or say in a synchronized way is organizing. In order to make sense of the data received, it is important to organize them.

We can organize the data by –

- Grouping them on the basis of their similarity, proximity, closure, continuity.
- Establishing a figure ground is the basic process in perception. Here by figure we mean what is kept as main focus and by ground we mean background stimuli, which are not given attention.
- Perceptual constancy that is the tendency to stabilize perception so that contextual changes don't affect them.

Interpreting

Finally, we have the process of interpreting which means forming an idea about a particular object depending upon the need or interest. Interpretation means that the information we have sensed and organized, is finally given a meaning by turning it into something that can be categorized. It includes stereotyping, halo effect etc.

Importance of Perception in OB

We need to understand what the role of perception in an organization is. It is very important in establishing different role of perceptions like –

- Understanding the tasks to be performed.
- Understanding associated importance of tasks allotted.
- Understanding preferred behavior to complete respective tasks.
- Clarifying role perceptions.

For example, every member in a group has to be clear regarding the role allotted to them. Programmer writes the code, tester checks it, etc.

Learning

Learning can be defined as the permanent change in behavior due to direct and indirect experience. It means change in behavior, attitude due to education and training, practice and experience. It is completed by acquisition of knowledge and skills, which are relatively permanent.

Nature of Learning

Nature of learning means the characteristic features of learning. Learning involves change; it may or may not guarantee improvement. It should be permanent in nature, that is learning is for lifelong.

The change in behavior is the result of experience, practice and training. Learning is reflected through behavior.

Factors Affecting Learning

Learning is based upon some key factors that decide what changes will be caused by this experience. The key elements or the major factors that affect learning are motivation, practice, environment, and mental group.

Coming back to these factors let us have a look on these factors –

- Motivation – The encouragement, the support one gets to complete a task, to achieve a goal is known as motivation. It is a very important aspect of learning as it acts gives us a positive energy to complete a task. Example – The coach motivated the players to win the match.
- Practice – We all know that "Practice makes us perfect". In order to be a perfectionist or at least complete the task, it is very important to practice what we have learnt. Example – We can be a programmer only when we execute the codes we have written.
- Environment – We learn from our surroundings, we learn from the people around us. They are of two types of environment – internal and external. Example – A child when at home learns from the family which is an internal environment, but when sent to school it is an external environment.
- Mental group – It describes our thinking by the group of people we chose to hang out with. In simple words, we make a group of those people with whom we connect. It can be for a social cause where people with the same mentality work in the same direction. Example – A group of readers, travelers, etc.

These are the main factors that influence what a person learns, these are the root level for our behavior and everything we do is connected to what we learn.

How Learning Occurs?

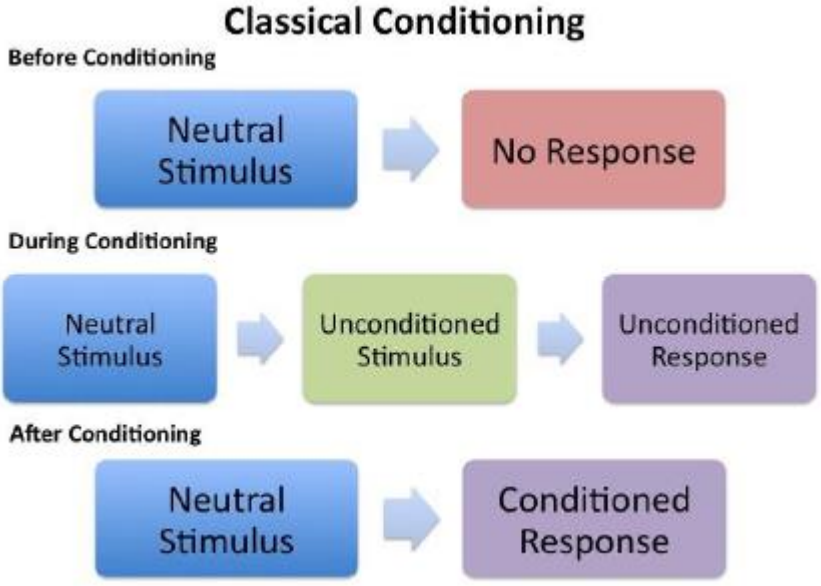
Learning can be understood clearly with the help of some theories that will explain our behavior. Some of the remarkable theories are –

- Classical Conditioning Theory
- Operant Conditioning Theory
- Social Learning Theory
- Cognitive Learning Theory

Classical Conditioning Theory

The classical conditioning occurs when a conditioned stimulus is coupled with an unconditioned stimulus. Usually, the conditioned stimulus (CS) is an impartial stimulus like the sound of a tuning fork, the unconditioned stimulus (US) is biologically effective like the taste of food and the unconditioned response (UR) to the unconditioned stimulus is an unlearned reflex response like salivation or sweating.

After this coupling process is repeated (for example, some learning may already occur after a single coupling), an individual shows a conditioned response (CR) to the conditioned stimulus, when the conditioned stimulus is presented alone. The conditioned response is mostly similar to the unconditioned response, but unlike the unconditioned response, it must be acquired through experience and is nearly impermanent.



Operant Conditioning Theory

Operant conditioning theory is also known as instrumental conditioning. This theory is a learning process in which behavior is sensitive to, or controlled by its outcomes.

Let's take an example of a child. A child may learn to open a box to get the candy inside, or learn to avoid touching a hot stove. In comparison, the classical conditioning develops a relationship between a stimulus and a behavior. The example can be further elaborated as the child may learn to salivate at the sight of candy, or to tremble at the sight of an angry parent.

In the 20th century, the study of animal learning was commanded by the analysis of these two sorts of learning, and they are still at the core of behavior analysis.

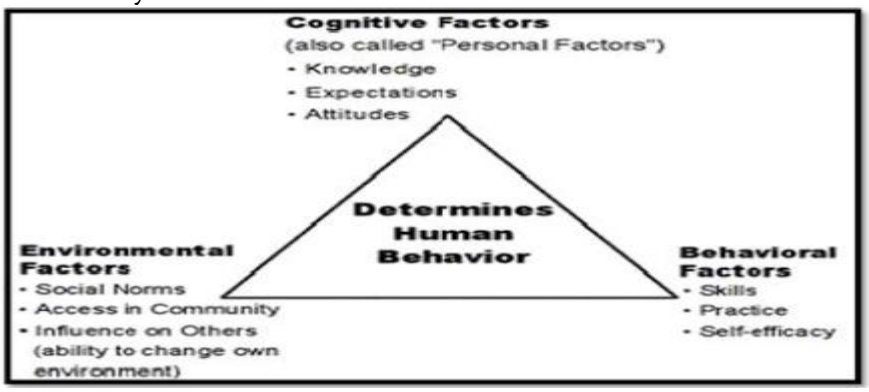
Operant Conditioning

	Reinforcement Increase Behavior	Punishment Decrease Behavior
Positive Stimulus (something added)	Positive Reinforcement Add something to increase behavior	Positive Punishment Add something to decrease behavior
Negative Stimulus (something removed)	Negative Reinforcement Remove something to increase behavior	Negative Punishment Remove something to decrease behavior

Social Learning Theory

The key assumptions of social learning theory are as follows –

- Learning is not exactly behavioral, instead it is a cognitive process that takes place in a social context.
- Learning can occur by observing a behavior and by observing the outcomes of the behavior (known as vicarious reinforcement).
- Learning includes observation, extraction of information from those observations, and making decisions regarding the performance of the behavior (known as observational learning or modeling). Thus, learning can occur beyond an observable change in behavior.
- Reinforcement plays an important role in learning but is not completely responsible for learning.
- The learner is not a passive receiver of information. Understanding, environment, and behavior all mutually influence each other.



Cognitive Learning Theory

Cognition defines a person's ideas, thoughts, knowledge, interpretation, understanding about himself and environment.

This theory considers learning as the outcome of deliberate thinking on a problem or situation based upon known facts and responding in an objective and more oriented manner. It perceives that a person learns the meaning of various objects and events and also learns the response depending upon the meaning assigned to the stimuli.

This theory debates that the learner forms a cognitive structure in memory which stores organized information about the various events that occurs.

Learning & Organizational Behavior

An individual's behavior in an organization is directly or indirectly affected by learning.

Example – Employee skill, manager's attitude are all learned.

Behavior can be improved by following the listed tips –

- Reducing absenteeism by rewarding employees for their fair attendance.
- Improving employee discipline by dealing with employee's undesirable behavior, drinking at workplace, stealing, coming late, etc. by taking appropriate actions like oral reprimands, written warnings and suspension.
- Developing training programs more often so as to grab the trainees' attention, provide required motivational properties etc.

Attitude: Nature, Components and Formation

Following are the salient features which contribute to the meaning of attitudes:

1. Attitudes refer to feelings and beliefs of individuals or groups of individuals. For example "He has a poor attitude", "I like her attitude."

2. The feeling's and beliefs are directed towards other people, objects or ideas. When a person says, "I like my Job". It shows that he has a positive attitude towards his job.

3. Attitudes often result in and affect the behaviour or action of the people. Attitudes can lead to intended behaviour if there are no external interventions.

4. Attitudes constitute a psychological phenomenon which cannot be directly observed. However, an attitude can be observed indirectly by observing its consequences. For example, if a person is very regular in his job, we may infer that he likes his job very much.

5. Attitudes are gradually acquired over a period of time. The process of learning attitude starts right from childhood and continues throughout the life of a person. In the beginning the family members

may have a greater impact on the attitude of a child.

6. Attitudes are evaluative statements, either favourable or unfavourable. When a person says he likes or dislikes something or somebody, an attitude is being expressed.

7. All people, irrespective of their status and intelligence hold attitudes.

8. An attitude may be unconsciously held. Most of our attitudes may be about those which we are not clearly aware. Prejudice furnishes a good example.

Components of Attitudes:

Attitudes comprise of three basic components: emotional, informational and behavioural.

These three components are described below:

1. Informational or Cognitive Component:

The informational component consists of beliefs, values, ideas and other information a person has about the object. It makes no difference whether or not this information is empirically correct or real. For example, a person seeking a job may learn from his own sources and other employees working in the company that in a particular company the promotion chances are very favourable. In reality, it may or may not be correct. Yet the information that person is using is the key to his attitude about that job and about that company.

2. Emotional or Affective Component:

The informational component sets the stage for the more critical part of an attitude, its affective component. The emotional components involve the person's feeling or affect-positive, neutral or negative-about an object. This component can be explained by this statement." I like this job because the future prospects in this company are very good".

3. Behavioural Component:

The behavioural component consists of the tendency of a person to behave in a particular manner towards an object. For example, the concerned individual in the above case may decide to take up the job because of good future prospects. Out of the three components of attitudes, only the behavioural component can be directly observed. One cannot see another person's beliefs (the informational component) and his feelings (the emotional component). These two components can

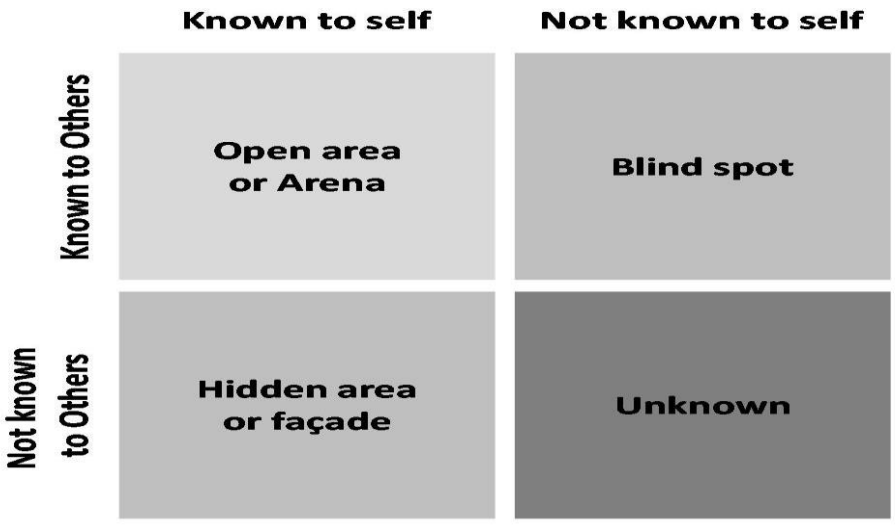
only be inferred. But still understanding these two components is essential in the study of organisationalbehaviour or the behavioural component of attitudes.

BASIS FOR COMPARISON	ATTITUDE	BEHAVIOR
Meaning	Attitude refers to a person's mental view, regarding the way he/she thinks or feels about someone or something.	Behavior implies the actions, moves, conduct or functions of an individual or group towards other persons.
Based on	Experience and observation	Situation
Trait	Human	Inborn
What is it?	A person's mindset.	Outward expression of attitude.
Reflects	What you think or feel?	What you do?
Defined by	Way we perceive things.	Social Norms

The Johari Window Model

The Johari window model is used to enhance the individual's perception on others. This model is based on two ideas- trust can be acquired by revealing information about you to others and learning yourselves from their feedbacks. Each person is represented by the Johari model through four quadrants or window pane. Each four window panes signifies personal information, feelings, motivation and whether that information is known or unknown to oneself or others in four viewpoints.

The Johari Window Model



The Johari Window Model

The method of conveying and accepting feedback is interpreted in this model. A Johari is represented as a common window with four panes. Two of these panes represent self and the other two represent the part unknown to self but to others. The information transfers from one pane to the other as the result of mutual trust which can be achieved through socializing and the feedback got from other members of the group.

1. Open/self-area or arena – Here the information about the person his attitudes, behaviour, emotions, feelings, skills and views will be known by the person as well as by others. This is mainly the area where all the communications occur and the larger the arena becomes the more effectual and dynamic the relationship will be. 'Feedback solicitation' is a process which occurs by understanding and listening to the feedback from another person. Through this way the open area can be increased horizontally decreasing the blind spot. The size of the arena can also be increased downwards and thus by reducing the hidden and unknown areas through revealing one's feelings to other person.

2. Blind self or blind spot – Information about yourselves that others know in a group but you will be unaware of it. Others may interpret yourselves differently than you expect. The blind spot is reduced for an efficient communication through seeking feedback from others.

3. Hidden area or façade – Information that is known to you but will be kept unknown from others. This can be any personal information which you feel reluctant to reveal. This includes feelings, past experiences, fears, secrets etc. we keep some of our feelings and information as private as it affects the relationships and thus the hidden area must be reduced by moving the information to the open areas.

4. Unknown area – The Information which are unaware to yourselves as well as others. This includes the information, feelings, capabilities, talents etc. This can be due to traumatic past experiences or events which can be unknown for a lifetime. The person will be unaware till he discovers his hidden qualities and capabilities or through observation of others. Open communication is also an effective way to decrease the unknown area and thus to communicate effectively.

What Is Transactional Analysis?

Transactional analysis is a social psychology developed by Eric Berne, MD (d.1970). Berne's theory consists of certain key concepts that practitioners use to help clients, students, and systems analyze and change patterns of interaction that interfere with achieving life aspirations. Over the past 40 years, Berne's theory has evolved to include applications in counseling, education, organizational development, and psychotherapy. Research studies have evaluated the effectiveness of transactional analysis in a wide variety of contexts. (See also training and certification in transactional analysis.)

- The counseling specialization is chosen by professionals working in such diverse contexts as social welfare, health care, pastoral work, prevention, mediation, process facilitation, multicultural work, and humanitarian activities, to name a few.
- Educational transactional analysis is used by practitioners working in training centers, preschools, elementary and high schools, universities, and institutions that prepare teachers and trainers as well as in support of learners of all ages to thrive within their families, organizations, and communities.
- Organizational transactional analysts work in, or for, organizations using transactional analysis concepts and techniques to evaluate an organization's developmental processes and challenges as well as its dysfunctional behaviors.
- Psychotherapists utilize transactional analysis to facilitate their clients' capacities for self-actualization and healing by learning to recognize and change old, self-limiting patterns.

Ego States

Definition: The Ego States are an important aspect of transactional analysis that talks about how a person feels, behave or think at any point of time.

let's understand each of these three ego states in detail:

Parent Ego: The parent ego, refers to the behavior and attitude of an emotionally significant individual who acted with quite a maturity when he was a child. He possesses the parental traits of being overprotective, dogmatic, distant, indispensable and upright and behaves very judiciously at any time.

There are two types of a parent ego: critical and nurturing. The critical parent ego is one when an individual shows the critical and evaluative behavior while interacting with the others. Whereas the nurturing parent ego is one, when individual shows the kind and nurturing behavior, not only

towards children but towards all with whom he interacts.

Adult Ego: The adult ego shows the logical thinking and reasoning ability of an individual. The person behaving or interacting with adult ego seeks all the information properly, validate it using his reasoning skills and then provide it to the other people. The person possessing the adult ego can be judged through his discussions and the way he thinks about a situation before arriving at the conclusion.

As the individual grows, he updates his parent data to identify what is valid or not valid, similarly the child data is also updated to determine which feeling should be expressed and which should be left unspoken. In this way, the adult ego helps an individual to control his emotional expressions appropriately.

Child Ego: The child ego, refers to the state of an individual when he behaves illogically and takes quick actions to satisfy the immediate needs without thinking much about its consequences. The creativity, depression, conformity, dependence, hate, fear, etc. are some of the main characteristics of this ego state. The child ego represents the childhood state when an individual has not become social and is in its initial stage of development.

The child ego can be natural, adaptive and rebellious. The natural child is sensuous, impulsive, affectionate and does things that come naturally. Whereas the adaptive child is one, who is trained and instructed by parents to behave in a manner taught by them. The rebellious child is one who is not allowed to open up and experiences anger, fear and frustration.

Life Positions

Definition: The Life Positions refers to the specific behavior towards others that an individual learns on the basis of certain assumptions made very early in the life.

The life positions can be categorized as follows:

1. I am O.K., You are O.K.: This life position shows that an individual has several O.K. experiences with others. This means, an individual encountered no severe problems or issues with others in his childhood and had a normal relationship with them. People with such life positions about themselves and others around him can solve any problem very easily and realizes the significance of others being in his life. This position is based on the adult ego.
2. I am O.K., You are not O.K.: This life position is created when an individual was too much ignored when he was a child. Here, an individual believes that he is right, and all the others around him are wrong. These are the individual who possesses the rebellion child ego and put blame on others for anything that goes wrong with them.
3. I am not O.K., you are O.K.: This life position gets created when an individual feels that others do things better than him. He feels inferior to others and believes that others can do many things which he cannot do by himself. These kinds of people always complain about one thing or the other and remain highly dissatisfied with their lives.
4. I am not O.K., you are not O.K.: This kind of life position is created by those who lacks interest in living. They feel life is not worth living and are the ones who have been neglected by their parents in their childhood and were brought up by the servants. Such kind of people commits suicide or homicide to end their lives.

Thus, the life positions talk about the individual developing his identity, sense of worth and perception about others during his childhood and believing it to be true until and unless some major experience changes it.

Applications of TA

TA studies transactions amongst people and understands their interpersonal behaviour. It was developed by Eric Berne, a psychotherapist. He observed there are several 'people' inside each person who interact with other people in different ways.

1. Ego States,
2. Life Position and
3. Analysis of Transactions.

1. Ego States:

It represents a person's way of thinking, feeling and behaving. There are three ego states present in everyone: child, parent and adult. They are related to behaviour of a person and not his age. However, they are present in every person in varying degrees. There may be more of one ego state than another at a specific point of time. When two persons communicate with each other, communication is affected by their ego states. These are;

(a) Child ego:

Child behaviour reflects a person's response to communicate in the form of joy, sorrow, frustration or curiosity. These are the natural feelings that people learn as children. It reflects immediate action and immediate satisfaction. It reflects childhood experience of a person gained generally up to the age of five years.

A child can be:

(i) Natural child:

He is naturally curious, joyous or scornful. He does what comes his way naturally.

(ii) Adaptive child:

He reacts the way his parents want him to react. He is trained to act.

(iii)Rebellious child:

He has the experience of fear, frustration and anger.

(b) Parent Ego:

Parent behaviour is acquired through external environment. As young children, their parents' behaviour remains embedded in their minds which is reflected as parental ego when they grow up. It usually reflects protection, displeasure, reference to rules and working on the basis of past precedents.

This can be:

(i) Nurturing parent ego:

As nurturing parents, managers praise good performance of the workers. They interact with them and help them during times of distress. They reflect nurturing behaviour towards others.

(ii) Negative or critical parent ego:

As critical parents, managers criticize or ignore poor performance of the workers rather than help them to improve. They have a critical attitude while interacting with others.

(c) Adult ego:

Adult behaviour reflects the ability to analyse the situation and take logical decisions. He overcomes the emotional feelings and takes decisions based on facts and figures. This state is based upon reasoning, thinking, experience, rationality and discussion based on facts.

It updates the parental ego to determine what is right and wrong and child ego to determine what feelings to express and what not to express. These ego states are present in all human beings at some time or the other. People respond to different situations in different ways depending on their ego state.

UNIT IV

Groups

A group can be defined as two or more interacting and interdependent individuals who come together to achieve particular objectives. A group behavior can be stated as a course of action a group takes as a family. For example: Strike.

Types of Groups

There are two types of groups an individual forms. They are formal groups and informal groups. Let us know about these two groups.

Formal Groups

These are the type of work groups created by the organization and have designated work assignments and rooted tasks. The behavior of such groups is directed toward achieving organizational goals.

These can be further classified into two sub-groups –

- Command group – It is a group consisting of individuals who report directly to the manager.
- Interest group – It is a group formed by individuals working together to achieve a specific objective. Example – A group of workers working on a project and reporting to the same manager is considered as a command group. A group of friends chilling out together is considered as interest group or say members of a club.

Informal Groups

These groups are formed with friendships and common interests. These can be further classified into two sub-groups –

- Task group – Those working together to finish a job or task is known as task group.
- Friendship group – Those brought together because of their shared interests or common characteristics is known as friendship group.

Why Do People Join Groups

There is no particular reason answering why individuals join groups. Group helps individual to feel stronger, have fewer self-doubts, and be more contrary to threats.

The following points help us understand the need of joining a group by individuals –

- Security mirrors strength in numbers. Status pinpoints a prestige that comes from belonging to a specific group. Inclusion in a group is considered as important because it provides recognition and status.
- Self-esteem transmits people's feelings of self-worth. Membership can sometimes raise feelings of self-esteem like being accepted into a highly valued group.
- Affiliation with groups can meet one's social needs. Work groups significantly contribute to meet the need for friendships and social relations.
- Groups represent power. What mostly cannot be achieved individually becomes possible with group effort. Power might be aimed to protect themselves from unreasonable demands. Informal groups provide options for individuals to practice power.
- People may join a group for goal achievement. Sometimes it takes more than one person to accomplish a particular task.

Group Roles

The concept of roles is applicable to all employees within an organization as well as to their life outside the organization. A role is a set of expected behavior patterns attributed to the one who occupies the position demanded by the social unit.

Individuals play multiple roles at the same time. Employees attempt to understand what kind of behavior is expected from them. An individual when presented by divergent role expectations experiences role conflict. Group roles are divided into three types –

- Task-oriented Roles
- Relationship-oriented Roles
- Individual Roles

Task-oriented Roles

Roles allotted to individuals according to their work and eligibility is known as task-oriented roles. Task-oriented roles can broadly divide individuals into six categories initiator, informer, clarifier, summarizer, reality tester and information seekers or providers respectively.

- Initiator – The one who proposes, suggests, defines.
- Informer – The one who offers facts, expresses feelings, gives opinions.
- Clarifier – The one who interprets, defines, clarifies everything.
- Summarizer – The one who links, restates, concludes, summarizes.
- Reality Tester – The one who provides critical analysis.

- Information seekers or providers – The one who gives information and data.

These roles present the work performed by different individuals according to their marked designation.

Relationship-oriented Roles

Roles that group individuals according to their efforts made to maintain healthy relationship in the group and achieve the goals are known as relationship-oriented roles. There are five categories of individuals in this category namely: harmonizer, gatekeeper, consensus tester, encourager, and compromiser.

- Harmonizers – The one who limits tension and reconciles disagreements.
- Gatekeeper – The one who ensures participation by all.
- Consensus Tester – The one who analyzes the decision-making process.
- Encourager – The one who is warm, responsive, active, shows acceptance.
- Compromiser – The one who admits error, limits conflict.

These roles depict the various roles an individual plays to maintain healthy self as well as group relationships.

Individual Roles

Roles that classify a person according to the measure of individual effort put in the project aimed is known as individual roles. Five types of individuals fall into these roles: aggressor, blocker, dominator, cavalier, and avoidance.

- Aggressor – The one who devalues others, attacks ideas.
- Blocker – The one who disagrees and rebels beyond reason.
- Dominator – The one who insists superiority to manipulate.
- Cavalier – The one who takes part in a group non-productively.
- Avoidance – The one who shows special interest to avoid task.

These are the various roles a person plays in an organization.

Well-Functioning Groups

We know what a group is, why it is important to form a group, and what the group-oriented roles are. Now we need to know how to mark a group as a well-functioning group, what features are necessary for a group to mark it as efficient.

A group is considered effective when it has the following characteristics.

- Relaxed, comfortable, friendly atmosphere.
- Task to be executed are well understood and accepted.
- Members listen well and actively participate in given assignments.

- Assignments are made clear and are accepted.
- Group is acquainted of its operation and function.
- People express their feelings and ideas openly.
- Consensus decision-making process is followed.
- Conflict and disagreement center regarding ideas or method.

Group Behavior – Example

Let us understand group behavior with the help of an example.

To work on a specific project, we make a group of 4 members: Rohit, Raj, Sid, and Rahul. It is not possible for any one of them to complete the project individually as it may be time consuming as well as not all the members as individuals have mastered the skills required to complete the project. This indicates the need to come together as a group.

Moving ahead, let us specify their roles. Rohit is the initiator, as he proposes the idea of the project, Raj collects all the information and resources required for the project and becomes the informer, Sid is the clarifier as he interprets the data and saves refined information, and Rahul is the summarizer as he concludes the result of the project that is what do we achieve by the end of our project. These are the task-oriented roles.

Group Development

Definition: The Group Development means, forming the association of people to work as a group and direct their actions towards the accomplishment of a common goal. The jobs of each group member are interdependent and hence the performance of one will affect the entire group's performance. It is often called as a team building or team development.

The most famous and a well-known model of group development was proposed by Bruce Tuckman, that included four stages Viz, forming, storming, norming, performing and later the fifth stage adjourning was added to this model.

Tuckman's Stages of Group Development

1. Forming: At this stage, the formation of a new group begins, wherein the members come together and get to know each other through the interactions. Here the individuals are excited and anxious to know about the scope of the task and the ways to approach it. Generally, the individuals come with a desire to get accepted by others and avoid controversy or conflicts.
2. Storming: Once the forming stage is over, the individuals will start interacting with each other in the context of the task to be achieved. The conflict and competition among the group members will be highest at this stage.
3. Norming: Once the role of every member is cleared along with the authority and responsibility of each, the team members start settling in a group. Here, everybody works cohesively towards the target and appreciate each other's experience and skills.
4. Performing: At this stage, synergy gets created between the team members, where everyone works towards the accomplishment of a goal. This stage is characterized by flexibility and interdependence. The team members know each other so well that they can handle any complex problem that comes before the team.

   Also, the roles and responsibilities of member changes according to the situation frequently, because at this stage everyone is equally a task-oriented and people-oriented and thus can perform efficiently.

5. Adjourning: This is the last stage of group development, where the group is terminated, and the group members are separated from each other. Every group is created for a purpose, and once the purpose is fulfilled the group is adjourned.

Some authors call this stage as "mourning or deforming," because, the sense of loss is felt by the group members, at the time of separation from each other.

Thus, the researchers study about the group development to determine the changes that occur within the group.

THEORIES OF GROUP FORMATION

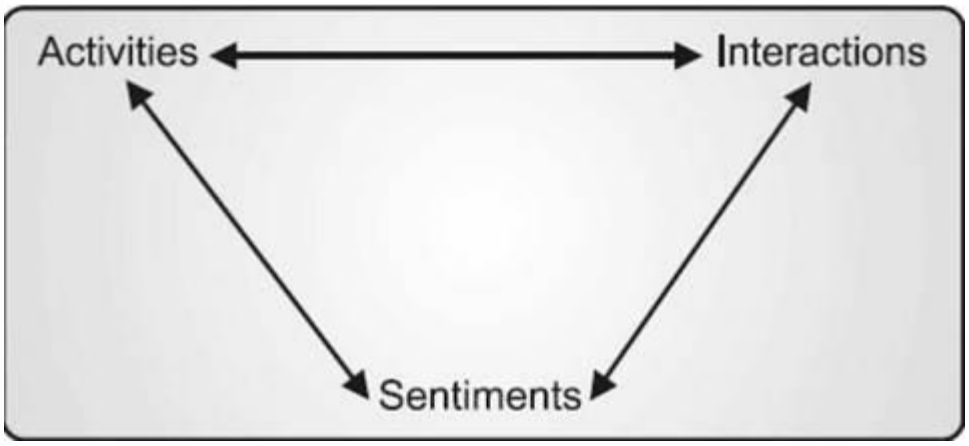
Homan's Theory

Homan's theory of group formation is based on three elements, namely, activities, interaction and sentiments. According to Homan, these three elements are directly related to each other. The required activities are the assigned tasks to people to work. The required interaction takes place when any person's activity takes place or is influenced by the activity of any other person. As regards sentiments, these are the feelings or attitudes of a person towards others, i.e., his likes or dislikes, approval or disapproval.

The key element is interaction because of which they develop common sentiments for one another

This theory explains the basic ideal behind forming groups. Scott observes that interaction is not only helps in attaining goals but also to solve problems, facilitate co-ordination, reduce tension and achieve a balance. Participants interacting in this manner tend to form powerful groups.

The following imaginary example will help understand Homan's theory in a better manner : Suppose, the students of Business Administration are in queue to deposit their examination fees in the State Bank of India. All of them have a common purpose, that is, to deposit fees when there turn comes. They see, a student from Mass Communication Department comes and breaks the queue to go ahead. The student whose turn was dislocated by the queue breaker tells the queue breaker not to do so and pushes him out. This influences all other students standing in the queue to follow the student whose turn was dislocated, in telling him not to break the queue. In this example, they can see activities and interaction taking place among the students. When the students actually disapprove the queue breaker in doing so, it reflects their sentiments towards each other. In sum and substances, all these activities took place because of the sentiments or feelings of the students/people.



Exchange Theory of Reward and Cost Outcome

Thaibaunt and Kelly put forward their theory of group formation, stating the outcome of interaction as the basis of group formation. According to them, the outcome of interaction should result in attraction and affiliation, also called rewards, among the persons of a group. In case, the interaction incurs anxiety or frustration or embarrassment or fatigue to the members of a group, it is, then, called cost for the members rather than a reward. In exchange theory, affiliation, interaction and common attitude play an important role.

Balance Theory

This theory was propounded by Newcomb. According to this theory, groups are formed on the basis of attractions of people towards each other having similar attitudes and values. Rao and Barman form relationship because of their common attitudes and values. They try to maintain a symmetrical relationship between the attraction and common attitudes and values. As and when, their relationship becomes unbalanced, both try to restore balance. However, if balance cannot be restored, then their relationship gets dissolved. Thus, one will appreciate that both attraction and interaction play a significant role in balance theory.

This theory also does not explain the full view of group formation as mere similarity of attitudes does not necessarily lead to group formation. Further, there are other reasons for group formation besides similarity of attitudes.

Team

Success in the workplace depends on your ability to build a team, as well as to interact with others on that team. Together, people are able to accomplish what one person alone can not. This is known as synergy.

Following are the characteristics of a Good/Effective team:

- A clear, elevating goal: This is a goal which has been communicated to all.
- A results-driven structure: The goal has been jointly decided by all the team members. They are fully committed towards achieving it.
- Competent members: Each team member has the required skill set in order to achieve the team objectives.
- Unified commitment: There is nothing happening in silos. With the total commitment from team members, achieving organizational goals becomes easier.
- A collaborative climate: Commitment from team members and a good leadership leads to a collaborative team with a productive work environment.
- Standards of excellence: Quality orientation is vital to the success of any organization.
- External support and recognition: Appreciation as well as appraisal is required to keep the morale of the team high.
- Principled leadership: Leadership defines a team. An able-bodied leadership can chart the team's path to success.
- Each team member participates actively and positively in meetings as well as projects. This shows a person's commitment as well as understanding towards a project.

- Team goals are clearly understood by all: Communication is vital for achieving successful completion of any project.
- Individual members have thought about creative solutions to the team's problem. Thinking out of the box is vital in today's economic scenario.
- Members are listened to carefully as well as given a thoughtful feedback. Listening is an important skill for any team. Each team member is important. The thoughts and ideas of each team member have to be listened to, with respect, no matter how silly they may sound at first.
- Everyone takes the initiative in order to get things done. There is no concept of passing the buck. This is an indication of clear communication leading to understanding of individual responsibilities.
- Each team member trusts the judgment of others: Mutual trust and respect is highly important for the team. This is the only way to achieve the organization goals.
- The team has to be willing to take risks: Risk taking is an attitude which comes with confidence. Confidence on yourself as well as on the team, besides the ability to face all consequences.
- Everyone has to be supportive of the project as well as of others. A team is one unit. Unless these cohesive forces are there, the team will never be able to work efficiently enough.
- There is ample communication between the team members.
- Team decisions are made by using organized as well as logical methods.
- Dissenting opinions are never ignored: In fact, they are always recorded in order to be revisited in case the future situations dictate so.
- Teams are given realistic deadlines: External support as well as aid is vital to the success of any team.

An efficient team needs support from both inside and outside. It needs to meet the individual needs of its members in order to achieve the organization's goals.

Organizational Culture

Every company has its own unique personality, just like people do. The unique personality of an organization is referred to as its culture.

In groups of people who work together, organizational culture is an invisible but powerful force that influences the behavior of the members of that group.

According to Richard Perrin, "Organizational culture is the sum of values and rituals which serve as glue to integrate the members of the organization."

According to Alan Adler, "Organizational culture is civilization in the workplace."

Characteristics of organizational culture are;

- Innovation (Risk Orientation).
- Attention to Detail (Precision Orientation).
- Emphasis on Outcome (Achievement Orientation).
- Emphasis on People (Fairness Orientation).
- Teamwork (Collaboration Orientation).
- Aggressiveness (Competitive Orientation).

- Stability (Rule Orientation).

Conflict Management definition

Conflict management refers to techniques and ideas designed to reduce the negative effects of conflict and enhance the positive outcomes for all parties involved.

The techniques and ideas used depend on the type of conflict that needs managing – researchers differentiate between affective (relational) and substantive (performance, process or task-specific) conflict, as well as interorganisational conflict (between two or more businesses) and intraorganisational (conflict within organisations).

Conflict resolution can be an aim of conflict management but not all conflict management techniques or styles have conflict resolution as the ultimate target as it may not be feasible.

Models of conflict management are very varied – theories that came out of the 1970s and 1980s focused on the intentions of the parties involved in conflict as the key to moving towards positive outcomes.

Khun and Poole (2000) classified approaches as either distributive or integrative, the former focused on distributing a fixed number of positive outcomes between warring parties, and the latter as focused on integrating the opposing needs of the parties to create the best outcome for all involved.

Rahim (2002) identified, among the literature, five common management approaches to conflict resolution: integrating, obliging, dominating, avoiding and compromising.

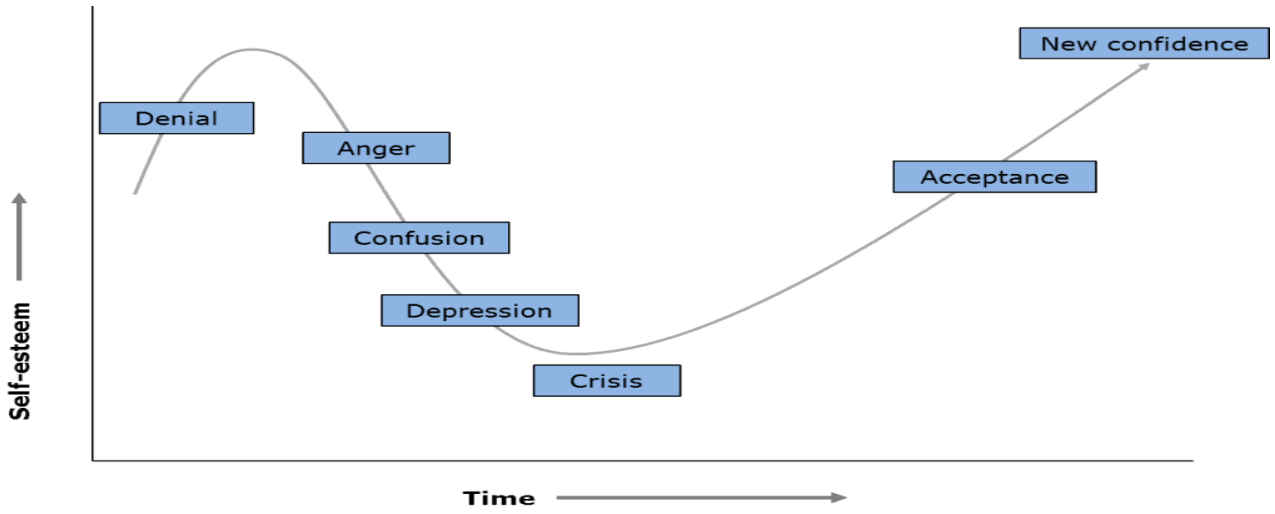
ORGANIZATIONAL CHANGE – REASONS WHY PEOPLE RESIST CHANGE

Expecting resistance to change and planning for it from the start of your change management progamme will allow you to effectively manage objections.

Understanding the most common reasons people object to change gives you the opportunity to plan your change strategy to address these factors.

It's not possible to be aware of all sources of resistance to change. Expecting that there will be resistance to change and being prepared to manage it is a proactive step. Recognizing behaviors that indicate possible resistance will raise awareness of the need to address the concerns.

Classic psychological reactions to change



At the end of the day all sources of resistance to change need to be acknowledged and people's emotions validated.

It's far better to anticipate objections than to spend your time putting out fires, and knowing how to overcome resistance to change is a vital part of any change management plan.

TOP 12 TYPICAL REASONS FOR RESISTANCE TO CHANGE

1. Misunderstanding about the need for change/when the reason for the change is unclear — If staff do not understand the need for change you can expect resistance. Especially from those who strongly believe the current way of doing things works well…and has done for twenty years!
2. Fear of the unknown — One of the most common reasons for resistance is fear of the unknown. People will only take active steps toward the unknown if they genuinely believe – and perhaps more importantly, feel – that the risks of standing still are greater than those of moving forward in a new direction
3. Lack of competence — This is a fear people will seldom admit. But sometimes, change in organizations necessitates changes in skills, and some people will feel that they won't be able to make the transition very well
4. Connected to the old way — If you ask people in an organization to do things in a new way, as rational as that new way may seem to you, you will be setting yourself up against all that hard wiring, all those emotional connections to those who taught your audience the old way – and that's not trivial
5. Low trust — When people don't believe that they, or the company, can competently manage the change there is likely to be resistance
6. Temporary fad — When people belief that the change initiative is a temporary fad
7. Not being consulted — If people are allowed to be part of the change there is less resistance. People like to know what's going on, especially if their jobs may be affected. Informed employees tend to have higher levels of job satisfaction than uninformed employees

8. Poor communication — It'sself evident isn't it? When it comes to change management there's no such thing as too much communication
9. Changes to routines — When we talk about comfort zones we're really referring to routines. We love them. They make us secure. So there's bound to be resistance whenever change requires us to do things differently
10. Exhaustion/Saturation — Don't mistake compliance for acceptance. People who are overwhelmed by continuous change resign themselves to it and go along with the flow. You have them in body, but you do not have their hearts. Motivation is low
11. Change in the status quo — Resistance can also stem from perceptions of the change that people hold. For example, people who feel they'll be worse off at the end of the change are unlikely to give it their full support. Similarly, if people believe the change favours another group/department/person there may be (unspoken) anger and resentment
12. Benefits and rewards — When the benefits and rewards for making the change are not seen as adequate for the trouble involved

Expecting resistance to change and planning for it from the start of your change management progamme will allow you to effectively manage objections. Not dealing proactively is one pitfall – but there are many other common mistakes.

Cross cultural management

Cross cultural management involves managing work teams in ways that considers the differences in cultures, practices and preferences of consumers in a global or international business context. Many businesses have to learn to modify or adapt their approaches in order to compete on a level in fields no longer bound by physical geography with online interactions more common in business and other situations.

Functions include

- Recruiting candidates that can be effective in cross-cultural environments
- Handling differing regulatory environments for business
- Training employees to handle intercultural communication issues
- Facilitating cross-cultural teams
- Aligning HR policies and procedures across corporate entities in different nations

FINANCIAL ACCOUNTING (103)

UNIT-I

MEANING AND SCOPE OF ACCOUNTING

DEFINITION

Financial accountancy (or financial accounting) is the field of accountancy concerned with the preparation of financial statements for decision makers, such as stockholders, suppliers, banks, employees, government agencies, owners and other stakeholders.

In 1966, American accounting Association (AAA) defined accounting as "Accounting is the process of identifying, measuring and communicating economic information to permit the informed judgements and decisions by the users of the information."

In 1941, American Institute of Certified public Accountants (AICPA) defined accounting as "Accounting is the art of recording, classifying and summarizing in significant manner and in terms of money, transactions and events which are, in part, at least of a financial character and interpreting the results thereof."

Financial capital maintenance can be measured in either nominal monetary units or units of constant purchasing power. The central need for financial accounting is to reduce the various principal-agent problems, by measuring and monitoring the agents' performance and thereafter reporting the results to interested users.

SCOPE OF ACCOUNTING:

Accounting as compared to book-keeping has a very wide and huge role to play in the businesses whether there is a small firm engaged in few transactions to a large MNC with multiple transactions daily, Accounting is required everywhere. Accounting not only maintains the records but also analyzes and interprets the results also. Accounting is being done in any nature and size of the firm, example: schools, hospitals, banks, retail shops. Nowadays Accountants are serving the accounting requirements of various businesses and organizations for which they require expertise in the same field.

Accounting has grown in its importance today as a discipline that provides results online in a quick and accessible form that can be used by the management for decision-making.

It has been recognized as a tool for mastering the economic problems that a business organization may have to face.

There are several parties now connected with the accounting information they are as follows:

- Proprietors
- Managers
- Suppliers
- Investors

Thus accounting is being used anywhere and everywhere as it is the need of an hour to give rise to any business event that occurs daily many a times as it accounts for the profitability and returns of the business.

NATURE OF ACCOUNTING:

Accounting as a discipline has been originated to serve the purpose of the organization in maintaining and updating the records and transactions of the various business events on a day-to-day basis. It functions as a means from which various parties connected to the business can get the accounting information and the management is able to do the decision-making for various business plans and policies.

The accountants are hired for maintaining and preparing the records and financial statements, provide the results and also conduct analysis and conclusions drawn from them.
From the above on e can derive the basic nature as follows:

1. It keeps and maintains the record of the business.
2. It also helps to analyze and interpret the financial data.
3. It is useful in decision-making.
4. It is useful in preparation and compilation of financial results.
5. It also serves as a means to depict the financial position of the business.
6. It ignores the qualitatitive aspects of the business.
7. The information provided in accounting is based on estimates.

FUNCTIONS OF ACCOUNTING

1. Record Keeping
2. Protecting of properties
3. Communication of results
4. Meeting legal requirements

OBJECTIVES OF ACCOUNTING ARE

1. To keep systematic records: Its main objective is to keep complete record of Business transactions. It avoids the possibility of omission and fraud.
2. To calculate profit or loss: Accounting helps to ascertain the net profit earned or loss suffered on account of business transactions during a particular period.
   To ascertain profit or loss at the end of each accounting period Trading and Profit& Loss is prepared.
3. To facilitate decision making: The information collected from various financial statements is useful in decision-making and is of use to the parties connected to the business.
4. To ascertain the financial position of the business: The businessman is able to know the financial position of the firm through the profits made or losses incurred by the firm during the accounting period as well as the balance-sheet serve as a basis of serving the

financial status of the firm at a particular date.

RELATIONSHIP OF ACCOUNTING WITH ECONOMICS

Prof. Robbins has defined term 'economics' as follows-

"Economics is the science, which studies human behavior as a relationship between ends and scarce means which have alternatives uses."However when a person is to take any economical decision, he has to depend mainly on the accounting information. Generally an accountant is concerned with the economic problems of an only one enterprise only, but an economist is concerned with the problems of an industry as a whole. Micro levels data, arranged by the accounting system, is summed up to get macro level data base. Thus at the macro level, accounting provides the basic data, upon which the economic models are developed.

However, there exists a wide gulf between economists' and accountants' concept of income and capital For example, the profit according to an economist is not same thing as the profit according to an accountant. No doubt, accountants have derived the ideas of value, income and capital maintenance from economists, but suitably modified to make them usable in practical circumstances. Thus, Economics and Accounting are close related subjects.

Relationship of Accounting with Mathematics

Knowledge of arithmetic and algebra is a pre-requisite for accounting computations and measurements. Calculations of interest and annuity etc. are some examples of fundamental uses of mathematics in accounting.

Presently graphs and charts are being widely used for communicating accounting information to the users. Thus the knowledge in geometry and trigonometry has become essential to have a better understanding about the accounting communication system.

Relationship of Accounting with Statistics

Collection, Tabulation, Analysis and presentation of data are some primary functions, which are performed by both Accountants and statisticians.The accountant is mainly concerned with the monetary data, although to some extent, he is also concerned with the quantitative data. But a statistician is concerned equally with the monetary and quantitative data.The use of statistics is accounting can be appreciated better in the context of the nature of accounting records. Accounting information is very precise; it is exact to the last paisa. But for decision-making purposes, such precision is not necessary and hence the statistical approximations are sought. Accounting records generally confined to one year, while statistical analysis is more useful if a longer period is taken. For example, a longer period will be required to fit the trend line. Statistical methods are helpful in developing accounting data and in their interrelation. Therefore the study and application of statistical methods will add extra edge to the accounting data.

Relationship of Accounting with Law

Every business house has to work within legal environment. All the transactions with suppliers and customers are governed by the Contract Act, Sale of Goods Act, Negotiable Instruments Act, etc. The entity, itself, created and controlled by laws. For example a partnership business is controlled by Partnership Act, a company is created and controlled by the Companies Act. Very often the accounting system to be followed has been prescribed by the law. For example the Companies Act has prescribed the format of financial statements.However legal prescription about the accounting system is the product of development in accounting knowledge. That is to say legislation about accounting system cannot be enacted unless there is a corresponding development in the accounting discipline. In what way, accounting influences law and is also influenced by law.

Relationship of Accounting with Management

Management is a broad occupational field, which comprises many functions and application of many disciplines including statistics, mathematics, economics, etc. Accountants are well placed in the management and play a key role in the management them. A large portion of

accounting information is prepared for management decision-making. In the management team, an accountant is in a better position to understand and use such data. In other words, since an accountant plays an active role in management, he understands the data requirement. So, accounting system can be molded to serve the management purpose.

Advantages of Financial Accounting:

• It provides legal information to stakeholders such as financial accounts in the form of trading, profit and loss account and balance sheet.
• It shows the mode of investment for shareholders. • It provides business trade credit for suppliers.
• It notifies the risks of loan in business for banks and lenders.

Limitations of Financial Accounting:

One of the major limitations of financial accounting is that it does not take into Account the non-monetary facts of the business like the competition in the market, change in the value for money etc.

The following limitations of financial accounting have led to the development of cost Accounting:

1. **No clear idea of operating efficiency**: You will agree that, at times, profits may be more or less, not because of efficiency or inefficiency but because of inflation or trade depression. Financial accounting will not give you a clear picture of operating efficiency when prices are rising or decreasing because of inflation or trade depression.

2. **Weakness not spotted out by collective results**: Financial accounting discloses only the net result of the collective activities of a business as a whole. It does not indicate profit or loss of each department, job, process or contract. It does not disclose the exact cause of inefficiency i.e.it does not tell where the weakness is because it discloses the net profit of all the activities of a business as a whole. Say, for instance, it can be compared with a reading on a thermometer. A reading of more than 98.4° or less than 98.4º discloses that something is wrong with the human body but the exact disease is not disclosed. Similarly, loss or less profit disclosed by the profit and loss account is a signal of bad performance of the business in whole, but the exact cause of such performance is not identified.

3. **Not helpful in price fixation:** In financial accounting, costs are not available as an aid in determining prices of the products, services, production order and lines of products.

4. **No classification of expenses and accounts**: In financial accounting, there is no such system by which accounts are classified so as to give relevant data regarding costs by departments, processes, products in the manufacturing divisions, by units of product lines and sales territories, by departments, services and functions in the administrative division. Further expenses are not attributed as to direct and indirect items. They are not assigned to the products at each stage of production to show the controllable and uncontrollable items of overhead costs.

5. **No data for comparison and decision-making**: It will not provide you with useful data for comparison with a previous period. It also does not facilitate taking various financial decisions like introduction of new products, replacement of labour by machines, price in normal or special circumstances, producing a part in the factory or sourcing it from the market, production of a product to be continued or given up, priority accorded to different products and whether investment should be made in new products etc.

6. **No control on cost**: It does not provide for a proper control of materials and supplies, wages, labour and overheads.

7. **No standards to assess the performance**: In financial accounting, there is no such well developed system of standards, which would enable you to appraise the efficiency of the organization in using materials, labour and overhead costs. Again, it does not provide you any such information, which would help you to assess the performance of various persons and departments in order that costs do not exceed a reasonable limit for a given quantum of work of the requisite quality.

Basis of Accounting:

There are basically two systems of accounting:
1. **Cash System of Accounting.**
2. **Accrual System of Accounting.**

Cash system of Accounting:
It is a system in which accounting entries are made only when cash is received or paid. No entry is made when a payment or receipt is merely due. For example, the rent for December 2009 has not been paid till January 10the 2010. Under cash basis, rent expense for the month of December will not be recorded as payment has not been made. Government system of accounting is mostly on the cash system.

Accrual System of Accounting:

It is a system in which accounting entries are made on the basis of amount having become due for payment or receipt. This system recognizes the fact that if a transaction or an event occurred, its consequences cannot be avoided and therefore, should be brought into book in order to present a meaningful picture of profit earned or loss suffered.

Accounting Principles-Concepts and Conventions

Meaning of Accounting Principles:

Financial accounting is information that must be processed and reported objectively. Third parties, who must rely on such information, have a right to be assured that the data is free from bias and inconsistency, whether deliberate or not. For this reason, financial accounting relies on certain standards or guides that are called 'Generally Accepted Accounting Principles' (GAAP). Principles derived from tradition, such as the concept of matching. In any report of financial statements (audit, compilation, review, etc.), the preparer/auditor must indicate to the reader whether or not the information contained within the statements complies with GAAP.

ACCOUNTING PRINCIPLES

• **Principle of regularity**: Regularity can be defined as conformity to enforced rules and laws.
• **Principle of consistency**: This principle states that when a business has fixed a specific method for the accounting treatment of an item, it will enter all similar items that follow, in exactly the same way.
• **Principle of sincerity**: According to this principle, the accounting unit should reflect in good faith the reality of the company's financial status.
• **Principle of the permanence of methods**: This principle aims at maintaining the coherence and comparison of the financial information published by the company.
Principle of non-compensation: One should show the full details of the financial information and not seek to compensate a debt with an asset, revenue with an expense etc.
• **Principle of prudence**: This principle aims at showing the reality 'as is': one should not try to make things look rosier than they are. Typically, revenue should be recorded only when it is certain and a provision should be entered for an expense, which is probable.
• **Principle of continuity**: When stating financial information, one assumes that business will not be interrupted. This principle mitigates the principle of prudence: assets do not have to be accounted at their disposable value, but it is accepted that they are at their historical value.
• **Principle of periodicity**: Each accounting entry should be allocated to a given period and split accordingly if it covers several periods. If a client pre-pays a subscription (or lease, etc.), the given revenue should be split to the entire time-span and not accounted for entirely

on the date of the transaction.

• **Principle of full disclosure/materiality**: All information and values pertaining to the financial position of a business must be disclosed in the records.

Accounting Concepts and Conventions:

An accounting convention is a modus operandi of universally accepted system of recording and presenting accounting information to the concerned parties. They are followed judiciously and rarely ignored. Accounting conventions are evolved through the regular and consistent practice over the years to aid unvarying recording in the books of accounts. Accounting conventions help in comparing accounting data of different business units or of the same unit for different periods. These have been developed over the years.

1. **Convention of relevance**: The convention of relevance emphasizes the fact that only such information should be made available by accounting that is pertinent and helpful for achieving its objectives. The relevance of the items to be recorded depends on its nature and the amount involved. It includes information, which will influence the decision of its client. This is also known as convention of materiality. For example, business is interested in knowing as to what has been the total labor cost. It is neither interested in knowing the amount employees spend nor what they save.
2. **Convention of feasibility**: The convention of feasibility emphasizes that the time, labor and cost of analyzing accounting information should be comparable to the benefits arising out of it. For example, the cost of 'oiling and greasing' the machinery is so small that its break-up per unit produced will be meaningless and will amount to wastage of labor and time of the accounting staff.

3. **Convention of consistency**: The convention of consistency means that the same accounting principles should be used for preparing financial statements year on year. An evocative conclusion can be drawn from financial statements of the same enterprise when there is similarity between them over a period of time. However, these are possible only when accounting policies and practices followed by the enterprise are uniform and consistent over a period. If dissimilar accounting procedures and practices are followed for preparing financial statements of different accounting years, then the result will not be analogous. Generally, a businessman follows the above-mentioned general practices or methods year after year. For example, while charging depreciation on fixed assets or valuing unsold stock, if a particular method is used it should be followed year after year, so that the financial statements can be analyzed and a comparison made.

4. **Convention of objectivity**: The convention of objectivity highlights that accounting information should be measured and expressed by the standards which are universally acceptable. For example, unsold stock of goods at the end of the year

should be valued at cost price or market price, whichever is less and not at a higher price even if it is likely to be sold at a higher price in the future.

5. **Convention of full disclosure**: Convention of full disclosure states that all material and relevant facts concerning financial statements should be fully disclosed. Full disclosure means that there should be complete, reasonable and sufficient disclosure of accounting information.Full refers to complete and detailed presentation of information. Thus, the convention of full disclosure suggests that every financial statement should disclose all pertinent information. For example, the business provides financial information to all interested parties like investors,lenders, creditors, shareholders etc. The shareholder would like to know the profitability of the firm while the creditors would like to know the solvency of the business. This is only possible if the financial statement discloses all relevant information in a complete, fair and an unprejudiced manner.

6. **Convention of conservatism**: This concept accentuates that profits should never be overstated or anticipated. However, if the business anticipates any loss in the near future, provision should be made for it in the books of accounts, for the same. For example, creating provision for doubtful debts, discount on debtors, writing off intangible assets like goodwill, patent and so on should be taken in to consideration. Traditionally, accounting follows the rule 'anticipate no profit and provide for all possible losses. 'For example, the closing stock is valued at cost price or market price, whichever is lower. The effect of the above is that in case market price has come down then provides for the 'anticipated loss', but if the market price has increased then ignore 'anticipated profits'. The convention of conservatism is a valuable tool in situation of ambiguity and qualms.

Introduction To Accounting Standards:

ACCOUNTING STANDARDS ISSUED BY ICAI AS-1
DISCLOSURE OF ACCOUNTING POLICIES AS-2
VALUATION OF INVENTORIES
AS-3 CASH FLOW STATEMENTS
AS-4 CONTINGECIES AND EVENTS OCCURING AFTER THE BALANCE SHEET DATE
AS-5 NET PROFIT OR LOSS FOR THE PERIOD, PRIOR PERIOD ITEMS AND CHANGES IN ACCOUNTING POLICIES
AS-6 DEPRECIATION ACCOUNTING
AS-7 ACCOUNTING FOR CONSTRUCTION CONTRACTS AS-8 ACCOUNTING FOR RESEARCH AND DEVELOPMENT AS-9 REVENUE RECOGNITION
AS-10 ACCOUNTING FOR FIXED ASSETS

AS-11 ACCOUNTING FOR THE EFFECTS OF CHANGES IN FOREIGN EXCHANGE RATES
AS-12 ACCOUNTING FOR GOVERNMENT GRANTS
AS-13 ACCOUNTING FOR INVESTMENTS
AS-14 ACCOUNTING FOR AMALGAMATIONS
AS-15 ACCOUNTING FOR RETIREMENT BENEFITS IN THE FINANCIAL STATEMENTS OF EMPLOYERS
AS-16 BORROWING COSTS

Basic Concepts of Accounting Standards:

Basic concepts of (GAAP) Accounting Standards :

In order to achieve the aforesaid objectives of GAAP and implement fundamental qualities, the set accounting standards feature four basic assumptions as listed below:

- **Going concern**

This assumption of GAAP accounting standards presumes that the business stays in operation indefinitely thus validating the techniques of asset capitalization, amortization, and depreciation. This assumption is, however, not applicable in case of liquidation. The business is believed to continue in the unforeseeable future.

- **Monetary Unit Principle**

This assumption presumes a stable currency going to be the unit of record.

- **Accounting Entity**

This assumption presumes the business to individually exist from its owners or other business entities. Also, revenue and expense need to be kept separate from personal expenses.

- **Time-period principle**

This assumption states that an entity's economic activities can be divided into simulated time-periods.

Benefits of Accounting Standards:

As per the accounting standards presented by GAAP, the financial reports should provide info which is:

Useful in being presented to potential creditors and investors in addition to other users in making cogent investment, credit, and similar financial decisions.

· Helpful for the potential creditors and investors in addition to other users in evaluating the timing, amounts, and uncertainty of probable cash receipts.

· Related to economic resources, the claims to these resources, and the changes occurring in them.

· Helpful in taking financial decisions.

· Helpful in taking long-term decisions.

· Helpful in improving the business' performance.

· Useful in maintaining records.

Procedure for Issuing Accounting Standards in India

A summarized extract of the text of the "Preface to the Statements of Accounting Standards (Revised 2004)," issued by the council of the Institute of Chartered Accountants of India, explains the procedure of issuing Accounting Standards. They are:

1. The ASB determines the broad areas requiring formulation of Accounting Standards and lists them according to priority.
2. In the preparation of Accounting Standards, the ASB is assisted by a Study Group, constituted for this purpose. Views of government, public sector undertakings, industry and other organizations are obtained before formulating the Exposure Draft.
3. The Exposure Draft comprises the following:

· Objective and scope of the standard.

· Definition of the terms used in the standard.

·The manner in which the accounting principles have been applied for formulating the standard.

· The presentations and disclosure requirements of it comply with the standard. Class of enterprises to which the standard will apply.

· Date from which the standard will be effective.

Need and Significance of IFRS:

International Financial Reporting Standards (IFRS) are principles-based Standards, Interpretations and the Framework adopted by the International Accounting Standards Board (IASB). IFRS represent a set of internationally accepted accounting principles used by companies to prepare financial statements.

The goal with IFRS is to make international comparisons as easy as possible. More than 100 countries around the world currently require or permit IFRS reporting. Approximately 85 of those countries require IFRS reporting for all domestic, listed companies. All member states of the EU are required to use IFRS as adopted by the EU for listed companies since 2005. The US is also gearing towards IFRS. While some countries require all companies to adhere to IFRS, others merely allow it or try to coordinate their own country's standards to be similar.

IFRS include the following Standards:

- IFRS 1 First-time Adoption of International Financial Reporting Standards. · IFRS 2 Share-based Payment.
- IFRS 3 Business Combinations. · IFRS 4 Insurance Contracts.
- IFRS 5 Non-current Assets Held for Sale and Discontinued Operations. ·IFRS 6 Exploration for and Evaluation of Mineral Resources.
- IFRS 7 Financial Instruments: Disclosures.
- IFRS 8 Operating Segments.
- IFRS 9 Financial Instruments.
- IAS 1 Presentation of Financial Statements.
- IAS 2 Inventories.
- IAS 7 Statement of Cash Flows.
- IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors. · IAS 10 Events after the Reporting Period.
- IAS 11 Construction Contracts.
- IAS 12 Income Taxes.
- IAS 16 Properties, Plant and Equipment.

· IAS 17 Leases. ·

IAS 18 Revenue.

· IAS 19 Employee Benefits.

· IAS 20 Accounting for Government Grants and Disclosure of Government Assistance.

· IAS 21 The Effects of Changes in Foreign Exchange Rates.

· IAS 23 Borrowing Costs.

· IAS 24 Related Party Disclosures.

· IAS 26 Accounting and Reporting by Retirement Benefit Plans. · IAS 27 Consolidated and Separate Financial Statements.

· IAS 28 Investments in Associates.

· IAS 29 Financial Reporting in Hyperinflationary Economies.

· IAS 31 Interests in Joint Ventures.

· IAS 32 Financial Instruments: Presentation.

· IAS 33 Earnings Per Share.

· IAS 34 Interim Financial Reporting.

· IAS 36 Impairment of Assets.

· IAS 37 Provisions, Contingent Liabilities and Contingent Assets.

· IAS 38 Intangible Assets.

· IAS 39 Financial Instruments: Recognition and Measurement. · IAS 40 Investment Property.

· IAS 41 Agriculture.

International Accounting Standards (IAS) are the older standards that IFRS are gradually replacing (IAS were issued from 1973 to 2000).

XBRL:

XBRL (Extensive Business Reporting Language) is a freely available and global standard for exchanging business information. XBRL allows the expression of semantic meaning commonly required in business reporting. The language is XML-based and uses the XML syntax and related XML technologies such as XML Schema, XLink, XPath, and Namespaces. One use of XBRL is to define and exchange financial information, such as a financial statement. The XBRL Specification is developed and published by XBRL International, Inc.

(XII). XBRL is a standards-based way to communicate and exchange business information between business systems. These communications are defined by metadata set out in taxonomies, which capture the definition of individual reporting concepts as well as the relationships between concepts and other semantic meaning. Information being communicated or exchanged is provided within an XBRL instance.

Early users of XBRL included regulators such as the U.S. Federal Deposit Insurance Corporation and the Committee of European Banking Supervisors (CEBS). Common functions in many countries that make use of XBRL include regulators of stock exchanges and securities, banking regulators, business registrars, revenue reporting and tax-filing agencies, and national statistical agencies

UNIT-2 JOURNALISING TRANSACTIONS

Rules of Debit and Credit

Any account that obtains a benefit is Debit. OR
Anything that will provide benefit to the business is Debit.
Both these statements may look different but in fact if we consider that whenever an account benefits as a result of a transaction, it will have to return that benefit to
the business then both the statements will look like different sides of the same picture. For credit,
Any account that provides a benefit is **Credit.**
OR
Anything to which the business has a responsibility to return a benefit in future is **credit**. As explained in the case of Debit, whenever an account provides benefit to
the business the business will have
a responsibility to return that benefit at some time in future and so it is Credit.

***Rules of Debit and Credit for Assets**

Similarly we have established that whenever a business transfers a value / benefit to
an account and as a result creates something that will provide future benefit; the `thing' is termed as **Asset**.
By combining both these rules we can devise following rules of Debit and Credit for Assets:
When an asset is created or purchased, value / benefit is transferred to that account, so it is debited.

I. Increase in Asset is Debit

Reversing the above situation if the asset is sold, which is termed as disposing off,
for say cash, the asset account provides benefit to the cash account. Therefore, the
asset account is credited.

II. Decrease in Asset is Credit

***Rules of Debit and Credit for Liabilities**

Anything that transfers value to the business, and in turn creates a responsibility on part of

the business to return a benefit, is a **Liability**. Therefore, liabilities are the exact opposite of the assets.

When a liability is created the benefit is provided to business by that account so it is Credited

III. Increase in Liability is Credit

When the business returns the benefit or repays the liability, the liability account benefits from the business. So it is debited

IV. Decrease in Liability is Debit

***Rules of Debit and Credit for Expenses**

Just like assets, we have to pay for expenses. From assets, we draw benefit for a long time whereas the benefit from expenses is for a short run. Therefore, Expenditure is just like Asset but for a short run.

Using our rule for Debit and Credit, when we pay cash for any expense that expense account benefits from cash, therefore, it is debited.

Now we can lay down our rule for Expenditure: **V. Increase in Expenditure is Debit**

Reversing the above situation, if we return any item that we had purchased, we will receive cash in return. Cash account will receive benefit from that Expenditure account. Therefore, Expenditure account will be credited

VI. Decrease in Expenditure is Credit *Rules of Debit and Credit for Income

Income accounts are exactly opposite to expense accounts just as liabilities are opposite to that of assets.

Therefore, using the same principle we can draw our rules of Debit and Credit for Income.

VII. Increase in Income is Credit

VIII. Decrease in Income is Debit

Posting and Preparation of Trial Balance:

Trial Balance:

Trial Balance is a list of closing balances of ledger accounts on a certain date and is the first step towards the preparation of financial statements. It is usually prepared at the end of an accounting period to assist in the drafting of financial statements. Ledger balances are segregated into debit balances and credit balances. Asset and expense accounts appear on the debit side of the trial balance whereas liabilities, capital and income accounts appear on the credit side. If all accounting entries are recorded correctly and all the ledger balances are accurately extracted, the total of all debit balances appearing in the trial balance must equal to the sum of all credit balances.

How to prepare a Trial Balance:

Following Steps are involved in the preparation of a Trial Balance:

1. All Ledger Accounts are closed at the end of an accounting period.
2. Ledger balances are posted into the trial balance.
3. Trial Balance is cast and errors are identified.
4. Suspense account is created to agree the trial balance totals temporarily until corrections are accounted for.
5. Errors identified earlier are rectified by posting corrective entries.
6. Any adjustments required at the period end not previously accounted for are incorporated into the trial balance.

Closing Ledger Accounts:

Ledger accounts are closed at the end of each accounting period by calculating the totals of debit and credit sides of a ledger. The difference between the sum of debits and credits is known as the closing balance. This is the amount which is posted in the trial balance.

How closing balances are presented in the ledger depends on whether the account is related to income statement (income and expenses) or balance sheet (assets, liabilities and equity). Balance sheet ledger accounts are closed by writing 'Balance c/d' next to the balancing figure since these are to be rolled forward in the next accounting period. Income statement ledger accounts on the other hand are closed by writing 'Income Statement' next to the residual amount because it is being transferred to the income statement as revenue or expense incurred for the period.

The steps involved in closing a ledger account may be summarized as below:

1. Add the totals of both sides of a ledger
2. The higher of the totals among the debit side and credit side must be inserted at the end of **BOTH** sides. Closing balance is the balancing figure on the side with the lower balance.
3. In case of ledger accounts of assets, liabilities and equity, 'balance c/d' is written next to the closing balance whereas in case of income and expenses ledger accounts, 'Income Statement' is written next to the closing balance.
4. The closing balances of all ledger accounts are posted into the trial balance.

Closing Balance of all ledger accounts are posted into the trial balance. It is important to remember that a debit closing balance in the ledger account appears on the credit side but in the trial balance it is presented in the debit column and vice versa.

Posting of closing balances should be done carefully as many errors may occur during the posting process such as Posting Error, Transposition Errors and Slide error.

Following is an example of a trial balance prepared from the closing balances of the ledgers detailed above.

ABC LTD **Trial Balance as at 31 December 2011**		
Account Title	**Debit (in rupees)**	**Credit (in rupees)**
Share Capital		10,000
Bank Loan		10,000
Cash	30,000	
Salaries Expense	5,000	
Sales Revenue		15,000
Total	**35,000**	**35,000**

Capital and Revenue:

Capital: The amount invested in the firm by the owner is referred to as the Capital. The expenditure borne/incurred in purchase of fixed assets, investments is known as Capital Expenditure.

Revenue: The profit/gain arising from the business from the sale proceeds is referred to as the revenue. Revenue includes the total cost/expenses (whether direct or indirect) and the total income earned during the accounting period by the firm.

Classification of Income:

- Gain on sale of Investments.
- Capital Income.
- Dividends Received.
- Interest Received.
- Commission Received.

Classification of Expenditure:

- Investment in Fixed Assets.
- Purchase of Land & Building.
- Repairs and Installation of Tools & Equipments.
- Payment of direct and indirect expenses.
- Deferred Revenue Expenditure.
- Depreciation on Fixed Assets.

Capital and Revenue Expenditure

Expenditure on fixed assets may be classified into Capital Expenditure **and** Revenue Expenditure. **The distinction between the nature of capital and revenue expenditure is important as only capital expenditure is included in the cost of fixed asset.**

Capital Expenditure:

Capital expenditure includes costs incurred on the acquisition of a fixed asset and any subsequent expenditure that increases the earning capacity of an existing fixed asset.

The cost of acquisition not only includes the cost of purchases but also any additional costs incurred in bringing the fixed asset into its present location and condition (e.g. delivery costs).

Capital expenditure, as opposed to revenue expenditure, is generally of a one-off kind and its benefit is derived over several accounting periods. Capital Expenditure may include the following:

- Purchase costs (less any discount received)
- Delivery costs
- Legal charges
- Installation costs
- Up gradation costs
- Replacement costs

Revenue Expenditure

Revenue expenditure incurred on fixed assets include costs that are aimed at 'maintaining' rather than enhancing the earning capacity of the assets. These are costs that are incurred on a regular basis and the benefit from these costs is obtained over a relatively short period of time. For example, a company buys a machine for the production of biscuits. Whereas the initial purchase and installation costs would be classified as capital expenditure, any subsequent repair and maintenance charges incurred in the future will be classified as revenue expenditure. This is so because repair and maintenance costs do not increase the earning capacity of the machine but only maintains it (i.e. machine will produce the same quantity of biscuits as it did when it was first put to use).

Revenue costs therefore comprise of the following:

- Repair costs
- Maintenance charges
- Repainting costs
- Renewal expenses

As revenue costs do not form part of the fixed asset cost, they are expensed in the income statement in the period in which they are incurred.

Journal and subsidiary Books:

JOURNAL

The word 'Journal' has been derived from the French word 'JOUR' means daily records. **Journal** is a book of original entry in which transactions are recorded as and when they occur in chronological order (in order of date) from source documents. Recording in journal is made showing the accounts to be debited and credited in a systematic manner. Thus, the journal provides a date-wise record of all the transactions with details of the accounts and amounts debited and credited for each transaction with a short explanation, which is known as narration. Firms having limited number of transactions record those in journal and from there post these to the concerned ledger accounts. Firms having large number of transactions, maintain some special purpose journals such as, Purchase Book, Sales Books, Returns books, Bills Book, Cash Book, Journal proper etc.

COMPOUND JOURNAL ENTRY

A compound journal entry is an accounting entry which effects more than two account heads. A simple journal entry has one debit and one credit whereas a compound journal entries includes one or more debits and/or credits than a simple journal entry. A compound journal entry may combine two or more debits and a credit, or a debit and two or more credits, or two or more of both debits and credits.

OPENING ENTRY

In the case of continuing business we are required to pass an entry in the journal for bringing in the new books all assets and liabilities as appearing in the books on the last day of the previous year. This entry is known as 'opening entry'. Rule of passing opening entry is to debit each asset account; credit each liability account; excess of debits over credits represents capital balance.

SUB DIVISION OF JOURNAL

CASH JOURNAL

The number of cash transactions in a firm is generally larger, therefore, it becomes inconvenient to record all cash transactions in the journal. Since all cash transactions are recorded for the first time in the cash book, it is therefore called a book of original entry. Only cash transactions are recorded in the cash book.

PETTY CASH BOOK

It saves the time of chief cashier. Maintenance of petty cash book does not require any specialized knowledge of accounting. It provides control over small payments. It minimizes the chances of fraud.

PURCHASE JOURNAL

It is a subsidiary book which records transactions of credit purchases of goods. Cash purchases are not recorded in the purchases book since they are recorded in the cash book.

SALES JOURNAL

It is a subsidiary book which records transactions of credit sales of goods. Cash sales will be recorded in the cash book and not in the sales book. Sale of assets is not recorded in the sales books.

SALES RETURN JOURNAL

Sales returns journal is a subsidiary book in which seller records all the sales that have been returned to him by his customers. Sales returns journal is also known as returns inwards book and sales returns day book.

VOUCHER SYSTEM

Type of internal system used to control the cash (checks) being spent (written). The voucher system consists of vouchers, voucher files (paid and unpaid), voucher register that takes the place of the purchase journal, cash register that takes the place of the cash disbursement journal, and the general journal.

UNIT-III
Depreciation

Depreciation is systematic allocation the cost of a fixed asset over its useful life. It is a way of matching the cost of a fixed asset with the revenue (or other economic benefits) it generates over its useful life. Without depreciation accounting, the entire cost of a fixed asset will be recognized in the year of purchase. Depreciation is the measure of wearing out of a fixed asset. All fixed assets are expected to be less efficient as time goes on.

Depreciation is calculated as the estimate of this measure of wearing out and is charged to the Profit & Loss account either on a monthly or annual basis. The cost of the asset less the total depreciation will give you the Net Book Value of the asset. This will give a misleading view of the profitability of the entity. The observation may be explained by way of an example.

Example

ABC LTD purchased a machine costing $1000 on 1st January 2001. It had a useful life of three years over which it generated annual sales of $800. ABC LTD's annual costs during the three years were $300.

Causes for Depreciation:

The major causes of depreciation are as follows:

1. Wear And Tear

wear and tear refer to a decline in the efficiency of asset due to its constant use. When an asset losses its efficiency, its value goes down and depreciation arises. This is true in case of tangible assets like plant and machinery, building, furniture, tools and equipment used in the factory.

2. Effusion of Time

The value of asset may decrease due to the passage of time even if it is not in use. There are some intangible fixed assets like copyright, patent right, and lease hold premises which decrease its value as time elapse.

3. Exhaustion

An asset may loss its value because of exhaustion too. This is the case with wasting assets such as mines, quarries, oil-wells and forest-stand. On account of continuous extraction, a stage will come where mines and oil-wells get completely exhausted.

Objectives for providing Depreciation:

1. **Ascertainment of True Profits**

   When an asset is purchased, it is nothing more than a payment in advance for for the use of asset. Depreciation is the cost of using a fixed asset. To determine true and correct amount of profit or loss, depreciation must be treated as revenue expenses and debited to profit and loss account.

2. Reporting of True And Fair Financial Position Of A Business

The value of assets decrease over a period of time on account of various factors. In order to present a true state of affairs of the business, the assets should be shown in the balance sheet, at their true and fair values. If the depreciation is not provided then the asset will appear in the balance sheet at the original value. So, in order to show the true financial position of a business, depreciation is required to be charged on the assets.

3. Replacement of Assets

Assets used in the business need to be replaced after the expiry of their useful life. Depreciation can be taken as a source of fund for replacing worn out asset by a new asset. Thus, depreciation charges help in accumulating funds for the replacement of an asset.

4.Saving In Taxes The profit and loss account will show more profits if depreciation is not charged on asset. So, the business needs to pay more income tax to the government. Depreciation charges on assets save the amount of tax equivalent to tax rate. Since it is shown as expense in the profit and loss account, it reduces the amount of the profit.

4. Obsolescence Changes in fashion are external factors which are responsible for throwing out of assets even if those are in good condition. For example black and white televisions have become obsolete with the introduction of color TVs, the users have discarded black and white TVs although they are in good condition. Such as loss on account of new invention or changed fashions is termed as obsolescence.

Methods of Calculating Depreciation:

There are two basic methods of depreciation to choose from when depreciating an asset. These methods include **Straight-line and Written Down Value Method..**

The **Straight-Line** method is generally the most commonly used method due to its simplicity and consistency of allocating depreciation evenly over the useful life of the asset. To calculate depreciation under this method, the Cost of the Asset is reduced by the salvage or residual value to arrive at the depreciable basis. The resulting depreciable basis is then divided by the estimated useful life.

Straight Line Method (SLM)

This is the simple method of depreciation.

It charges equal amount of depreciation each year over useful life of asset.

It first add up all the costs incurred to bring the asset in use and then it divides that by the useful life of asset in years to calculate the depreciation expense.

E.g.: Say a Computer costs Rs. 30,000 and Rs. 11,000 (as additional set-up/installation/maintenance expenses) = Rs 41,000 and it is anticipated that its scrap value will be Rs. 1,000 at the end of its useful life, of say, 5 yrs.

Total Cost = Cost of Computer + Installation Exp. + Other Direct Costs

Depreciable Amount over No. of years = Total Cost - Salvage Value (At end of useful life)

30,000 +11,000 =41,000 (Total cost)

41,000 – 1,000 = 40,000 as the Depreciable Amount

Depreciable Amount = Rs. 40,000, Spread out over 5 years = Rs. 40,000/5(Yrs) = Rs. 8000/-depreciation per annum

Advantages:

- The straight-line method offers simplicity
- Write off the same amount each year and don't have to keep recalculating.
- Easy to determine profits for future years easily; at least as far as how much you will save because of depreciation. In other words, as your profits grow, your depreciation costs stay the same.
- This allows you to make financial forecasts for several years.
- You receive the benefit of depreciation evenly over the life of the asset.

Disadvantages:

- Assets tend to lose value more quickly in their early years.
- Straight-line depreciation does not take this fact into account. If you use assets as collateral for loans, the lender will assume your assets lose more of their value in their first years, so your straight-line method will make the asset look more valuable on your books than it really is for the lender.
- The efficiency of a machine declines in its later years and you will be writing off the same value in a later year as you did in the first year. The machine actually will have less value for you than your depreciation amount indicates.

Written Down Value Method (WDV)

- This method involves applying the depreciation rate on the Net Book Value (NBV) of asset. In this method, depreciation of the asset is done at a constant rate.
- In this method depreciation charges reduces each successive period.
- This method should be used in those assets, where high depreciation should be charged in initial years.

- Assume the price of a depreciable asset i.e. computer is Rs. 40,000 and its salvage value after 10 years is 0.

In this method NBV will never be zero.

Depreciation Per year = (1/N) Previous year's value, Where N= No. of years

So in our example, the depreciation amount during the first year is

[Rs. 40,000*1/10] =Rs. 4,000

NBV of computer after 1st year= Rs 40,000- 4,000 = Rs. 36,000

Depreciation for 2nd year is

[Rs. 36,000*1/10] =Rs. 3,600

Advantages:

1. Since under this method higher depreciation is charged in early years it takes into account that asset is more efficient in early years and therefore it is more realistic way of depreciation.

2. Since in early years machines requires less repairs and as the year passes by repair cost began to rise, therefore this method by charging more depreciation in early years and less in later years make sure that total cost of repairs and depreciation is same every year.

Disadvantages:

1. Since the rate of depreciation is fixed by not following formula chances of subjectivity in fixing rate of depreciation becomes high.

2. The value of asset will never be zero in books of account under this even if asset is of no use to company.

Change in method of charging Depreciation:

CHOICE OF DEPRECIATION METHOD

Depreciation expenses differ from method to method. Choice of selecting a suitable depreciation method is not easy. The decision is based on the inherent characteristic features of an asset.

Accelerated depreciation methods may be of much use in case of the following:

- Quality of the asset decreases with its age years roll, assets may loose its effective working capacity – Maintenance costs grow.

- Introduction of new equipment due to Research and Development may adversely affect the effective usage of existing equipment.
- The other Straight Line Method may be suitable for assets like buildings, furniture, patents, leases, etc. and for assets which do not warrant frequent repairs and renewals.
- Choice of a method of depreciation affects the amount of net income because quite often the management employs depreciation as an instrument of financial policy of the entity. Hence, selection of a method depends on the management too.

Change in depreciation amount due to change in method is to be given retrospective effect but in all other cases (like Change in Cost, Life, Revaluation etc.) Change in depreciation is given prospective effect

1. The depreciation method selected should be applied consistently from period to period.
2. A change from one method of providing depreciation to another should be made only if the adoption of the new method is required by statute or for compliance with an accounting standard or if it is considered that the change would result in a more appropriate preparation or presentation of the financial statements of the enterprise.
3. When a change in the method of depreciation is made, depreciation should be recalculated in accordance with the new method from the date of the asset coming into use. The deficiency or surplus arising from the retrospective recomputation of depreciation in accordance with the new method would be adjusted in the accounts in the year in which the method of depreciation is changed.
4. In case the change in the method results in deficiency in depreciation in respect of past years, the deficiency should be charged to the profit and loss account. In case the change in the method results in surplus, it is recommended that the surplus be initially transferred to the 'Appropriations' part of the profit and loss account and thence to General Reserve through the same part of the profit and loss account. Such a change should be treated as a change in accounting policy and its effects should be quantified and disclosed.

Salient Features of Accounting Standards(AS-6)(ICAI)Revised:

The Institute of Chartered Accountants of India, keeping in view with international accounting principles, revised (AS)–6.This standard AS–6 deals with the concept:

Depreciation is defined as "a measure of the wearing out, consumption or other loss of value of a depreciable asset arising from use, effusion of time or obsolescence through technology and market changes. Depreciation is allocated so as to charge a fair proportion of the depreciable amount in each accounting period during the Expected Useful Life of the Asset. Depreciation includes amortization of assets whose useful life is predetermined".

Salient features of AS–6 (Revised) Accounting for Depreciation:

i. Existing Assets: The depreciable amount of existing assets = Cost of the asset (historical not market value) – salvage (scrap value) value.

ii. Revision of estimate useful life of an asset: In case, if there is a necessity to revise the estimated life of an asset, the unamortized depreciable amount will have to be charged over the remaining useful life.

iii. Addition (or) extension to an existing asset of capital nature: In such cases, two factors will have to be considered:

   a) such an addition should retain separate identity,
   b) It can still be used after the disposal of existing assets.

Then, depreciation is to be determined independently on the basis of an estimate of its own useful life.

In other cases, the depreciation has to be determined on the basis of remaining useful life of the existing asset plus addition or extension as an integral part.

INVENTORIES:

The raw materials, work-in-process goods and completely finished goods that are considered to be the portion of a business's assets that is ready or will be ready for sale. Inventory represents one of the most important assets that most businesses possess, because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company's shareholders/owners.

Inventories are assets:

(a) held for sale in the ordinary course of business; (b) In the process of production for such sale; or

(c) In the form of materials or supplies to be consumed in the production process or in the rendering of services.

Inventories encompass goods purchased and held for resale, for example, merchandise purchased by a retailer and held for resale, computer software held for resale, or land and other property held for resale. Inventories also encompass finished goods produced, or work in progress being produced, by the enterprise and include materials, maintenance supplies, consumables and loose tools awaiting use in the production process. Inventories do not include machinery spares which can be used only in connection with an item of fixed asset and whose use is expected to be irregular; such machinery spares are accounted for in accordance with Accounting Standard (AS) 10, Accounting for Fixed Assets.

Valuation of Inventories:

Inventory is valued on the basis of the following factors:

1. **Measurement**

Inventories should be valued at the lower of cost and net realizable value.

The cost of inventories should comprise all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

2. **Costs of Purchase**

The costs of purchase consist of the purchase price including duties and taxes (other than those subsequently recoverable by the enterprise from the taxing authorities), freight inwards and other expenditure directly attributable to the acquisition. Trade discounts, rebates, duty drawbacks and other similar items are deducted in determining the costs of purchase.

3. **Costs of Conversion**

The costs of conversion of inventories include costs directly related to the units of production, such as direct labour. They also include a systematic allocation of fixed and variable production overheads that are incurred in converting materials into finished goods. Fixed production overheads are those indirect costs of production that remain relatively constant regardless of the volume of production, such as depreciation and maintenance of factory buildings and the cost of factory management and administration. Variable production overheads are those indirect costs of production that vary directly, or nearly directly, with the volume of production, such as indirect materials.

4. **Other Costs**

Other costs are included in the cost of inventories only to the extent that they are

incurred in bringing the inventories to their present location and condition. For example, it may be appropriate to include overheads other than production overheads or the costs of designing products for specific customers in the cost of inventories. Interest and other borrowing costs are usually considered as not relating to bringing the inventories to their present location and condition and are, therefore, usually not included in the cost of inventories.

Method of valuation of Inventories:

There are three basis approaches to valuing inventory that are allowed by GAAP -(a) **First-in, First-out (FIFO):** Under FIFO, the cost of goods sold is based upon the cost of material bought earliest in the period, while the cost of inventory is based upon the cost of material bought later in the year. This results in inventory being valued close to current replacement cost. During periods of inflation, the use of FIFO will result in the lowest estimate of cost of goods sold among the three approaches, and the highest net income.

(b) **Last-in, First-out (LIFO):** Under LIFO, the cost of goods sold is based upon the cost of material bought towards the end of the period, resulting in costs that closely approximate current costs. The inventory, however, is valued on the basis of the cost of materials bought earlier in the year. During periods of inflation, the use of LIFO will result in the highest estimate of cost of goods sold among the three approaches, and the lowest net income.

(c) **Weighted Average:** Under the weighted average approach, both inventory and the cost of goods sold are based upon the average cost of all units bought during the period. When inventory turns over rapidly this approach will more closely resemble FIFO than LIFO.

Firms often adopt the LIFO approach for the tax benefits during periods of high inflation, and studies indicate that firms with the following characteristics are more likely to adopt LIFO -rising prices for raw materials and labor, more variable inventory growth, an absence of other tax loss carry forwards, and large size. When firms switch from FIFO to LIFO in valuing inventory, there is likely to be a drop in net income and a concurrent increase in cash flows (because of the tax savings). The reverse will apply when firms switch from LIFO to FIFO.

Given the income and cash flow effects of inventory valuation methods, it is often difficult to compare firms that use different methods. There is, however, one way of adjusting for these differences. Firms that choose to use the LIFO approach to value inventories have to

specify in a footnote the difference in inventory valuation between FIFO and LIFO, and this difference is termed the LIFO reserve. This can be used to adjust the beginning and ending inventories, and consequently the cost of goods sold, and to restate income based upon FIFO valuation.

Periodic Inventory System:

Periodic inventory is a system of inventory in which updates are made on a periodic basis. This differs from perpetual inventory systems, where updates are made as seen fit.In a periodic inventory system no effort is made to keep up-to-date records of either the inventory or the cost of goods sold. Instead, these amounts are determined only periodically - usually at the end of each year. This physical count determines the amount of inventory appearing in the balance sheet. The cost of goods sold for the entire year then is determined by a short computation.

Perpetual Inventory System:

Under perpetual inventory system, inventory and cost of goods sold are updated for each sale/purchase and return transaction. We have already discussed the basic concept of perpetual inventory system in the comparison of perpetual-periodic inventory.

The perpetual inventory system is intended as an aid to material control. It is a system of stock control followed by stores department. The system follows a method of recording stores by which information about each receipt, issue and current balance of stock is always available.

Perpetual inventory system may be defined as a method of recording stores balances after every receipt and issue to facilitate regular checking and to obviate closing down for stock taking." So perpetual inventory system implies continuous maintenance of stock records and in its broad sense it covers both continuous stock taking as well as up to date recording of stores books. The balance of the same item of store in bin card should correspond with that shown in the materials or store ledger card and a frequent checking of these two records should be made and compared with the actual or physical quantity of materials in stock.

Final Accounts:

The financial statements of an organization made up at the end of an accounting period, usually the fiscal year. For a manufacturer, the final accounts consist of (1) manufacturing account, (2) trading account, (3) profit and loss account, and (4) profit and loss appropriation account. A commercial company's final accounts will include all of the above except the manufacturing account. Together, these accounts show the gross profit, net income, and distribution of net income figures of the company.

Form of Final Accounts: There is a standard format of final accounts only in the case of a limited company. There is no fixed prescribed format of financial accounts in the case of a proprietary concern and partnership firm.

- Transactions · Journal
- Ledger
- Trial Balance
- Trading & Profit & Loss Account · Balance Sheet

MEANING

The Trading and Profit & loss account and Balance Sheet prepared at the end of a year is known as **Final accounts**. While preparing the final accounts, there may be some items so far not adjusted. These items are to be adjusted in the final accounts for calculating the correct profit or loss of the business. The usual adjustments in the final accounts are:-

a. Expenses owing: - These are the expenses incurred during the year but not paid in cash. This amount will be paid in the near future (next year). The owing expense is to be added with the amount of same expense already paid given in the trial balance and it should be shown in the balance sheet as a current liability.

The double entry for recording the expenses owing is

Debit Expenses account

Credit Expenses owing account

This expense is also known as outstanding expenses, expenses payable or expense payable.

b. Prepaid expense. :- This is the expense paid during the year for the benefit of the next year. The portion of the expense which is prepaid is to be deducted from the total expenses already paid during the year (given in the trial balance) and shown as current asset in the balance sheet.

The double entry for recording the prepaid expense is

Debit Prepaid expense account and

Credit Expense account

This expense is also known as expense paid in advance or unexpired expense

c. Accrued income: - The income earned during the year but not received in cash is known as accrued income. The amount of accrued income is to be considered as current year's income and added

With the concerned income received during the year (given in the trial balance) and shown as a current asset in the balance sheet.

The double entry for recording the accrued income is:

Debit Accrued income account and

Credit Income account

The accrued income is also known as outstanding income.

d. Income received in advance: - This is the income received during the year for the services to be rendered during the next year. Since this income is not related to the current year, it should be deducted from the concerned income (given in the trial balance) and shown as a current liability in the balance sheet.

The double entry for recording the income received in advance is:

Debit Income account and

Credit Income received in advance

This is also known as unexpired income.

e. Depreciation: - The part of the cost of a fixed asset that is consumed by a business during the period of its use is known as depreciation. It is considered as an expense in the business therefore shown as an expense in the profit & loss account and deducted from the cost price of the concerned fixed asset in the balance sheet.

The double entry for recording depreciation is:

Debit Profit & loss account and

Credit Depreciation account

f. Bad debt: - The part of the amount of debtors which cannot be recovered is known as bad debt. It is an expense to be shown in the profit & loss account. If the bad debt appears in the trial balance, it is known as bad debt written off and shown in the profit & loss account only. If bad debt information appears among the adjustment points below the trial balance, then it should be shown as an expense in the profit & loss account and shown as a deduction from the debtors in the balance sheet under the heading "current assets".

The double entry for recording the bad debt is:

Debit Bad debt account and

Credit Debtors account

g. Goods drawings by the owner for his personal use:-

The amount of goods withdrawn by the owner for his personal use is to be considered as drawing. The double entry for recording the goods drawings is:

Debit Drawings account and

Credit Purchase account or sales account

The amount of goods drawings should be deducted from purchases and capital in the Balance Sheet.

From the following Trial Balance and additional information, you are required to prepare profit and loss account and Balance Sheet.

TRIAL BALANCE as on 31st March 2012

Particulars	Debit	Credit
Capital		2,90,000
Sundry Debtors	65,000	
Drawings	7,600	
Building	2,20,000	
Sundry Creditors		12,000
Wages	8,000	
Purchases	89,000	
Opening Stock	12,000	
Cash in Hand	1,900	

Cash at Bank	**12,000**	
Carriage Charges	**20,000**	
Salaries	**8,000**	
Rent, Taxes & Insurance	**1300**	
Sales		**1,50,000**
Purchase Returns		**4,500**
Sales Returns	**2,800**	
Bills Receivable	**15,000**	
Bils Payable		**7,000**
Interest		**3,500**
Advertisement	**2,400**	
Trade Expenses	**2,000**	
	4,67,000	**4,67,000**

Additional Information:

i. Closing Stock as on 31st March2012 was Rs.15,000.
ii. Prepaid Insurance Rs.400
iii. Outstanding Salaries Rs.2,000;Outstanding Rent & Taxes Rs.1,300 iv. Depreciation charged on Building @2%p.a.

Solution:

Dr. Trading and Profit & Loss Account as on 31st March2012 Cr.

Particulars	**Amount**	Particulars	**Amount**
To Opening Stock	12,000	By Closing Stock	15,000
To Purchases 89,000 (-)Returns 4,500	84,500	By Sales 1,50,000 (-)Returns 2,800	147200
To Wages	8,000		
To Carriage	20,000		
To Gross profit c/d	37,700		
	1,62,200		**1,62,200**
To Trade Expenses	2,000	By Gross Profit b/d	**37,700**
To Advertisement	2,400	By Interest	**3,500**
To Salaries 8,000	10,000		

(+)Outstanding 2,000			
To Rent,Taxes & Insurance 1,300 (-)Prepaid 400 (+)Outstanding1,200	2,200		
To Depreciation on Building	4,400		
To Net Profit transferred to Capital A/C	20,200		
	41,200		**41,200**

Balance-Sheet as on 31st March2012

Liabilities	Amount	Assets	Amount
Capital 2,90,000 (+)Net Profit 20,200 (-)Drawings 7,600	3,02,600	Building 2,20,000 (-)Depreciation 4,400	2,15,600
Creditors	12,000	Cash at Bank	12,000
Bills Payable	7,000	Cash in Hand	1,900
Outstanding Rent & Taxes	1,300	Debtors	65,000
Outstanding Salaries	2,000	Bills Receivable	15,000
		Prepaid Insurance	400
		Closing Stock	15,000
	3,24,900		**3,24,900**

PREPARATION OF FINAL ACCOUNTS OF NON-PROFIT ORGANIZATION

By preparing Receipts & Payments Account, Income and Expenditure Account and a Balance sheet.

Being a "non-profit" organization does not mean it doesn't make any profit, but rather that the profits are not distributed to investors as dividends. Many non-profit organizations make billions of dollars of profits per year, and often donate these corporate profits to charitable causes.

BANK RECONCILIATION STATEMENT

A **Bank reconciliation** is a process that explains the difference between the bank balance shown in an organisation's bank statement, as supplied by the bank, and the corresponding amount shown in the organization's own accounting records at a particular point in time.

Such differences may occur, for example, because a cheque or a list of cheques issued by the organization has not been presented to the bank, a banking transaction, such as a credit received, or a charge made by the bank, has not yet been recorded in the organisation's books, or either the bank or the organization itself has made an error.

It may be easy to reconcile the difference by looking at very recent transactions in either the bank statement or the organisation's own accounting records (cash book) and seeing if some combination of them tallies with the difference to be explained. Otherwise it may be necessary to go through and match every single transaction in both sets of records since the last reconciliation, and see what transactions remain unmatched. The necessary adjustments should then be made in the cash book, or any timing differences recorded to assist with future reconciliations.

A bank reconciliation statement is prepared to reconcile the two balances of Cash Book and Pass Book. So, when you will prepare a bank reconciliation statement you will start it with one balance make adjustments and then you will reach to the other balance. This way both the balances will agree.

The reasons for difference in balance of the cash book and pass book are as under :

i. Cheques issued by the firm but not yet presented for payment: When cheques are issued by the firm, these are immediately entered on the credit side of the bank column of the cash book. Sometimes, receiving person may present these cheques to the bank for payment on some later date. The bank will debit the firm's account when these cheques are presented for payment. There is a time period between the issue of cheque and being presented in the bank for payment. This may cause difference to the balance of cash book and pass book.

ii. Cheques deposited into bank but not yet collected: When cheques are deposited into bank, the firm immediately enters it on the debit side of the bank column of cash book. It increases the bank balance as per the cash book. But, the bank credits the firm's account when these cheques are presented for payment. There is a time period between the issue of cheque and being presented in the bank for payment. This may cause difference to the balance of cash book and pass book.

iii. Amount directly deposited in the bank account :Sometimes, the debtors or the

customers deposit the money directly into firm's bank account, but the firm gets the information only when it receives the bank statement. In this case, the bank credits the firm's account with the amount received but the same amount is not recorded in the cash book. As a result the balance in the cash book will be less than the balance shown in the Pass book.

iv. Bank Charges:The bank charge in the form of fees or commission is charged from time to time for various services provided from the customers' account without the intimation to the firm. The firm records these charges after receiving the bank intimation or statement. Example of such deductions is : Interest on overdraft balance, credit cards' fees, outstation cheques, collection charges, etc. As a result, the balance of the cash book will be more than the balance of the pass book.

v. Interest and dividend received by the bank: Sometimes, the interest on debentures or dividends on shares held by the account holder is directly deposited by the company through Electronic Clearing System (ECS). But the firm does not get the information till it receives the bank statement. As a consequence, the firm enters it in its cash book on a date later than the date it is recorded by the bank. As a result, the balance as per cash book and pass book will differ

vi. Direct payments made by the bank on behalf of the customers: Sometimes, bank makes certain payments on behalf of the customer as per standing instructions. Telephone bills, rent, insurance premium, taxes, etc are some of the expenses. These expenses are directly paid by the bank and debited to the firm's account immediately after their payment. but the firm will record the same on receiving information from the bank in the form of Pass Book or bank statement. As a result, the balance of the pass book is less than that of the balance shown in the bank column of the cash book.

vii. Dishonor of Cheques/Bill discounted: If a cheque deposited by the firm or bill receivable discounted with the bank is dishonored , the same is debited to firm's account by the bank. But the firm records the same when it receives the information from the bank. As a result, the balance as per cash book and that of pass book will differ.

viii. Errors committed in recording transactions by the firm: There may be certain errors from firm's side, e.g., omission or wrong recording of transactions relating to cheques deposited, cheques issued and wrong balancing etc. In this case, there would be a difference between the balances as per Cash Book and as per Pass Book.

ix. Errors committed in recording transactions by the Bank: Sometimes, bank may also

commit errors, e.g., omission or wrong recording of transactions relating to cheques deposited etc. As a result, the balance of the bank pass book and cash book will not agree.

UNIT-IV

CONSIGNMENT:

An arrangement whereby goods are left in the possession of another party to sell. Typically, the consignor receives a percentage of the sale (sometimes a very large percentage). Consignment deals are made on a variety of products - from artwork, to clothing, to books. In recent years, consignment shops have become rather trendy, especially those offering specialty products, infant wear and high-end fashion items.

It is also defined as a quantity of goods that are sent to a person or place to be sold the act or process of sending goods to a person or place to be sold.

Features of consignment are:

- The relation between the two parties is that of consignor and consignee and not that of buyer and seller
- The consignor is entitled to receive all the expenses in connection with consignment · The consignee is not responsible for damage of goods during transport or any other procedure
- Goods are sold at the risk of consignor. The profit or loss belongs to consignor only

A consignor who consigns goods to a consignee transfers possession but not ownership of the goods to the consignee. The consignor retains title to the goods. The consignee takes possession of the goods subject to a trust. If the consignee converts the goods to a use not contemplated in the consignment agreement, for example selling them and keeping the proceeds of the sale for himself, then the consignee commits the crime of embezzlement.

Accounting Entries in the Books of Consignor:

(1) **On dispatch of goods:-**

Consignment account

To Goods sent on consignment account (With the cost of goods)

---

(2) **On payment of expenses on dispatch:-**

Consignment account

To Bank account (With the amount spent as expenses)

---

(3) **On receiving advance:**

Cash or bills receivable account

To Consignee's personal account (With the amount cash or bill)

---

(4)**On the consignee reporting sale (as per A/S):-**

Consignee's personal account

To Consignment account (With gross proceeds of sales)

---

(5) **For expenses incurred by the consignee (as per A/S):-**

Consignment account

To Consignee's personal account (With the amount of expenses)

---

(6) **For commission payable to the consignee:-**

Consignment account

To Consignee's personal account (With the amount of expenses)

Difference between Consignment and Joint Venture

The main differences between joint venture and consignment are as under:

1. Nature

Joint venture: It is a temporary partnership business without a firm name.

Consignment: It is an extension of business by principal through agent.

2. Parties

Joint venture: The parties involving in joint venture are known as co-ventures.

Consignment: Consignor and consignee are involving parties in the consignment.

3. Relation

Joint venture: The relation between co-ventures is just like the partners in partnership firm. **Consignment:** The relation between the consignor and consignee is 'principal and agent'.

4. Sharing Profit

Joint venture: The profits and losses of joint venture are shared among the co-ventures in their agreed proportion.

Consignment: The profits and losses are not shared between the consignor and consignee. Consignee gets only the commission.

5. Rights

Joint venture: The co-ventures in a joint venture have equal rights.

Consignment: In consignment, the consignor enjoys principal's right whereas consignee enjoys the right of agent.

6. Exchange Of Information

Joint venture: The co-ventures exchange the required information among them regularly. **Consignment:** The consignee prepares an account sale which contains a details of business activities carried on and is being sent to the consignor.

7. Ownership

Joint Venture: All the co-ventures are the owners of the joint venture.

Consignment: The consignor is the owner of the business.

8. Method Of Maintaining Accounts

Joint venture: There are different methods of maintaining accounts in joint venture. As

per agreement the co-ventures maintain their account.

Consignment: In consignment, there is only one method of maintaining account.

9. Basis of Account

Joint venture: Cash basis of accounting is applicable in joint venture.

Consignment: Actual basis is adopted in consignment.

10. Continuity

Joint venture: As soon as the particular venture is completed, the joint venture is terminated.

Consignment: The continuity of business exists according to the willingness of both consignor and consignee.

Loss of Goods on Consignment

The goods are consigned from one place to another. After receiving the goods by consignee, the goods are stored by the consignee before selling them to customers. It is natural that some loss to the goods may take place within that period. The goods may be lost, destroyed or damaged either in transit or in consignee's store. Such loss can be divided into two parts.

1. Normal Loss

The loss which is caused by unavoidable reasons is known as normal loss. For examples shrinkage, evaporation, leakage and pilferage. Such losses form part of cost of goods and no additional adjustment is required for this purpose. The normal loss is borne by goods units. The quantity of such loss is to be deducted from the total quantity sent by the consignor. The following formula may be used for the valuation of unsold stock.

Value of closing stock= (Total value of goods sent/Net quantity received by consignee) X unsold quantity

Net quantity received = Goods consigned quantity - Normal loss quantity.

2. Abnormal Loss

The loss which could be avoided by proper planning and care are abnormal loss. They are like theft, riots, accidents, fire, earthquake etc. These losses could occur in transit or in consignee's store and solely to be borne by consignor.

The abnormal loss should be adjusted before ascertaining the result of the consignment. The valuation of abnormal loss is done on the same basis as the unsold stock is valued. The journal entries for abnormal loss in different cases are as under:

If goods are not insured For recording abnormal loss:

Abnormal loss A/C .....Dr.

To consignment A/C

For abnormal loss transferred: Profit and loss A/C.....Dr.

To abnormal loss A/C

If goods are insured and claim admitted in full

Bank/Consignee's/Insurance company A/C.....Dr.

To consignment A/C

If goods are insured and claim admitted in partial

Profit and loss A/C.....Dr. (Net loss amount)

Insurance Co./bank/consignee's A/c.....Dr. (Claim admitted) To consignment A/c (total loss amount)

The following method should be followed while valuing abnormal loss:

A) Goods sent on consignment (at cost price)…….....$

XXX B) Add: Non-recurring expenses:

Consignor's expenses…….....$ XXX

Consignee's expenses…….....$ XXX

Total cost before abnormal loss A+B…….....$ XXX

Value of abnormal loss = (Total cost/Total units consigned) X abnormal loss units.

Question: A& Co. of Kolkata sent on consignment account goods to B& Co. of Mumbai at an invoice price of Rs.29675 and paid for freight Rs.762,Cartage rs.232 and insurance rs.700.Half the goods were sold by agents for Rs.17,500,subject to the agent's commission of Rs.875,storage expenses of Rs.200 and other selling expenses of Rs.350.One-fourth of the consignment was lost by fire and a claim of Rs.5000 was recovered. Draw up the necessary accounts in the books of A & Co. and ascertain the profit or loss made on the consignment. The consignor received a two months bill of exchange from the agents in satisfaction of the dues.

Solution:

Consignment of Mumbai Account

Particulars	Amount	Particulars	Amount
To Goods sent on consignment	29,675	By B& Co.(Sale proceeds)	17500
To Cash: Freight 762 Cartage 232 Insurance 700	1694	By Abnormal Loss A/C	7843

To B & Co. Commission 875 Storage Expenses 200	1425	By Consignment Stock A/C	7843
Other Selling Expenses 350			
To Net Profit (transferred to P&L A/C)	392		
	33186		**33186**

B & Co. Mumbai

Particulars	**Amount**	**Particulars**	**Amount**
To Consignment to Mumbai (sale proceeds)	17500	By Consignment to Mumbai(expense and commission)	1425
		By Bills Receiveble A/C	16075
	17500		**17500**

Abnormal Loss Account

Particulars	**Amount**	**Particulars**	**Amount**
To Consignment A/C	7843	By Bank(received from Insurance Co.)	5000
		By P&L A/C	2843
	7843		**7843**

Working Notes:

Calculation of Abnormal Loss

Particulars	Rupees
¼ of invoice Price of goods	7419(approx)
Add :¼ of Freight, Cartage and Insurance	424
Total Abnormal Loss	7843
Less: Recovered from insurance Co.	5000
Net Abnormal Loss	2843

Joint Venture:

An association of two or more individuals or companies engaged in a solitary business enterprise for profit without actual partnership or incorporation; also called a joint adventure.

A joint venture is a contractual business undertaking between two or more parties. It is similar to a business partnership, with one key difference: a partnership generally involves an ongoing, long-term business relationship, whereas a joint venture is based on a single business transaction. Individuals or companies choose to enter joint ventures in order to share strengths, minimize risks, and increase competitive advantages in the marketplace. Joint ventures can be distinct business units (a new business entity may be created for the joint venture) or collaborations between businesses. In a collaboration, for example, a high-technology firm may contract with a manufacturer to bring its idea for a product to market; the former provides the know-how, the latter the means.

Difference between a Joint venture and Partnership

Partnership

A partnership is a legal arrangement where two or more people own a business together. This means that the entire business is shared for as long as the business exists. Both partners contribute money, time and expertise to making a profitable enterprise, and that enterprise lasts until the partnership is dissolved.

Joint Venture

You enter a joint venture for a specific project. There is a time limit on joint ventures, and they have clearly stated limits on their purposes. You might enter a joint venture in order

to make a product that neither partner can afford to make on her own. An example is developing new software. You do not give up half of your business in a joint venture; you share the profits and expenses for a particular venture.

Difference between Consignment and Joint Venture

The main differences between joint venture and consignment are as under:

1. Nature

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Consignment: It is an extension of business by principal through agent.

2. Parties

Joint venture: The parties involving in joint venture are known as co-ventures.

Consignment: Consignor and consignee are involving parties in the consignment.

3. Relation

Joint venture: The relation between co-ventures is just like the partners in partnership firm. **Consignment:** The relation between the consignor and consignee is 'principal and agent'.

4. Sharing Profit

Joint venture: The profits ans losses of joint venture are shared among the co-ventures in their agreed proportion.

Consignment: The profits and losses are not shared between the consignor and consignee. Consignee gets only the commission.

5. Rights

Joint venture: The co-ventures in a joint venture have equal rights.

Consignment: In consignment, the consignor enjoys principal's right whereas consignee enjoys the right of agent.

6. Exchange Of Information

Joint venture: The co-ventures exchange the required information among them regularly.

Consignment: The consignee prepares an account sale which contains a details of business activities carried on and is being sent to the consignor.

7. Ownership

Joint Venture: All the co-ventures are the owners of the joint venture. **Consignment:** The consignor is the owner of the business.

8. Method Of Maintaining Accounts

Joint venture: There are different methods of maintaining accounts in joint venture.As per agreement the co-ventures maintain their account.

Consignment: In consignment, there is only one method of maintaining account.

9. Basis of Account

Joint venture: Cash basis of accounting is applicable in joint venture. **Consignment:** Actual basis is adopted in consignment.

10. Continuity

Joint venture: As soon as the particular venture is completed, the joint venture is terminated.

Consignment: The continuity of business exists according to the willingness of both consignor and consignee.

FEATURES OF A JOINT VENTURE

The main features of a joint venture are specifically made clear. Two or more person are needed.

- It is an agreement to execute a particular venture or a project. · The joint venture business may not have a specific name.
- It is of temporary nature. So the agreement regarding the venture automatically stands terminated as soon as the venture is complete.
- The co-ventures share profit and loss in an agreed ratio. The profits and losses are to be shared equally if not agreed otherwise.
- The co-ventures are free to continue with their own business unless agreed otherwise during the life of joint venture.

Accounting Entries in a Joint Venture

Transactions	Debit	Credit
(1)When venture contributes cash to joint funds	Joint Bank A/C (total Amount)	Venturer's A/C(individual contribution)
(2) When amount is spent on account of expenses, for purchasing goods for the	Joint venture A/C	Joint Bank A/C
(3)If any expenses are paid by the venturers	Joint Venture A/C	Venturer's A/C
(4)For Sales: i. Cash ii. Credit	Joint Bank A/C Sundry Debtors A/C	Joint Venture A/C Joint Venture A/C
(5) If Stock is taken by a venturer	Venturer's A/C	Joint Venture A/C
(6)If any stock remains unsold	Joint Venture Stock A/C	Joint venture A/C

(7) Balance of the Joint venture A/C will be either profit or Loss.	Joint Venture A/C(if profit)	Venturer's A/C
If Loss	Venturer's A/c	Joint Venture A/C
(8)Joint Bank Account and personal account of the Venturer's A/C will be automatically closed by		

Hire Purchase:

Hire Purchase is defined as a system for purchasing merchandise, such as cars or furniture, in which the buyer takes possession of the merchandise on payment of a deposit and completes the purchase by paying a series of regular installments while the seller retains ownership until the final installment is paid

A method of buying goods through making installment payments over time. The term hire purchase originated in the U.K., and is similar to what are called "rent-to-own" arrangements in the United States. Under a hire purchase contract, the buyer is leasing the goods and does not obtain ownership until the full amount of the contract is paid.

Parties in a Hire-Purchase System:

1. **Hirer**-who buy the goods at any time by giving notice to the owner and paying the balance of the HP price less a rebate (each jurisdiction has a different formula for calculating the amount of this rebate).He also to pay the hire installments and to take reasonable care of the goods (if the hirer damages the goods by using them in a non-standard way, he or she must continue to pay the installments and, if appropriate, recompense the owner for any loss in asset value).
2. **Seller-** a person who has the resources and the legal right to sell the goods on credit (which usually depends on a licensing system in most countries), the seller and the owner will be the same person. But most sellers prefer to receive a cash payment immediately

He also has the right to terminate the agreement where the hirer defaults in paying the installments or breaches any of the other terms in the agreement.

Hire Purchase agreements must be in writing and signed by both [parties].They must clearly lay out the following information in a print that all can read without effort:

1. A clear description of the goods 2. The cash price for the goods
3. The Hire Purchase price, i.e., the total sum that must be paid to hire and then purchase the goods
4. The deposit
5. The monthly installments (most states require that the applicable interest rate is disclosed and regulate the rates and charges that can be applied in HP transactions) and
6. A reasonably comprehensive statement of the parties' rights (sometimes including the right to cancel the agreement during a "cooling-off" period).
7. The right of the hirer to terminate the contract when he feels like doing so with a valid reason.

Characteristics of Hire-Purchase System

The characteristics of hire-purchase system are as under

- Hire-purchase is a credit purchase.
- The price under hire-purchase system is paid in installments.
- The goods are delivered in the possession of the purchaser at the time of commencement of the agreement.
- Hire vendor continues to be the owner of the goods till the payment of last installment.

The hire-purchase has a right to use the goods as a bailer.

- The hire-purchase has a right to terminate the agreement at any time in the capacity of a hirer.
- The hire-purchaser becomes the owner of the goods after the payment of all installments as per the agreement.
- If there is a default in the payment of any installment, the hire vendor will take away the goods from the possession of the purchaser without refunding him any amount.

Thus," **hire- purchase agreement**" means an agreement under which goods are let on hire and under which the hirer has an option to purchase them in accordance with the terms of the agreement and includes an agreement under which-

- possession of goods is delivered by the owner thereof to a person on condition that such person pays the agreed amount in periodical installments, and
- the property in the goods is to pass to such person on the payment of the last of such installments, and (iii) such person has a right to terminate the agreement at any time before the property so passes;
- " hirer" means the person who obtains or has obtained possession of goods from an owner under a hire- purchase agreement, and includes a person to whom the hirer' s rights or liabilities under the agreement have passed by assignment or by operation of law;
- "owner" means the person who lets or has let, delivers or has delivered possession of goods, to a hirer under a hire- purchase agreement and includes a person to whom the owner' s property in the goods or any of the owner' s rights or liabilities under the agreement has passed by assignment or by operation of law.

Difference between Hire-Purchase System and Installment System Installment Payment System is system of purchase and sale of goods in which title of goods is immediately transferred to the purchaser at the time of sale of goods and the sale price of the goods is paid in installments. In the event of default in payment of any installment, the seller has no right to take back goods from the possession of the purchaser. He can file a suit for the recovery of the outstanding balance of the price of goods sold.

The followings are the differences between Hire-purchase system and Installment payment system:

- In **Hire-purchase system**, the transfer of ownership takes place after the payment of all installments while in case of **Installment payment system**, the ownership is transferred immediately at the time of agreement.
- In **Hire-purchase system**, the hire-purchase agreement is like a contract of hire though later on it may become a purchase after the payment of last installment while in **Installment payment system**, the agreement is like a contract of credit purchase.
- In case of default in payment, in **Hire-purchase system** the vendor has a right to

back goods from the possession of the hire-purchaser while in case of **Installment payment system**, the vendor has no right to take back the goods from the possession of the purchaser; he can simply sue for the balance due.

- In **Hire-purchase system**, if the purchaser sells the goods to a third party before the payment of last installment, the third party does not get a better title on the goods purchased. But in case of **Installment payment system**, the third party gets a better title on the goods purchased.

In **Hire-purchase system** the provisions of the Hire-purchase Act apply to the transaction while in case of **Installment payment system**, the provisions of Sale of Goods Act apply to the transaction.

Accounting Entries in the Books of Hire purchaser

Journal Entries in the Books Of Hire Purchaser

There are two methods of recording hire purchase transactions in the books of the hire purchaser: i. When the asset is recorded in full cash price-full cash price method

ii. When the asset is recorded at cash price actually paid in each installment-: Actual cash price method.

1. **For the purchase of asset**: First Method

Asset A/C (full cash price).....Dr. To vendor A/C

Second Method

No entry

2. **For the payment made for 'down payment'** First Method

Vendor A/C.....Dr. To bank A/C

Second Method

Asset

A/C.....Dr. To

Bank A/C

3. **For installment due**

First Method

Interest

A/C.....Dr. To

vendor A/C

Second Method

Asset A/C (part of cash

value).....Dr. To Interest A/C

4. **For the payment of installment (both method)** Vendor A/C.....Dr.

To Bank A/C

5. **For charging depreciation(on the basis of cash value) (both methods)**

Depreciation A/C.....Dr.

To Asset A/C

6. **For transfer of interest and depreciation (both methods)**

Profit and loss A/C.....Dr.

To depreciation

A/C To interest

A/C

Journal Entries In The Books Of Vendor

1. **For selling goods on hire purchase**

Hire purchase A/C.....Dr. (full cash price) To sales/hire purchase sales A/C

2. **For receiving down payment** Cash/bank A/C.....Dr.
To hire purchaser A/C

3. **For installment due**
Hire purchaser A/C.....Dr. To Interest A/C

4. **For receiving the installment** Cash/bank A/C .....Dr.
To hire purchaser A/C

5. **For transferring interest** Interest A/C.....Dr.
To profit and loss A/C

Posting in Ledger Accounts: After passing journal entries under any of the methods discussed above, the following ledger accounts are opened in the ledger and the postings are made accordingly.

(i) Asset A/c. (e.g. Trucks A/c, Machinery A/c. etc.) (ii) Vendor's A/c.
(iii) Interest A/c.
(iv) Depreciation A/c.

Note: Before recording the entries the amounts of interest and depreciation will be calculated in two separate tables showing the calculations of interest and depreciation.

Calculation of Interest

The total payment made under hire-purchase system is more than cash price. In fact, this excess of payment over the cash price is interest. It is very essential to calculate interest because the amount paid for interest is charged to revenue and the asset is capitalized at cash price. Thus normally all installments will include a part of cash price and a part of interest on the outstanding balance. However the amount paid at the time of agreement (down payment) will not include any interest. The calculation of interest is made under two conditions:

(a) When interest is included in amount of installment: Where the hire-purchase price i.e. payment made in the form of down payment and all installments is more than the cash price, it is regarded that the interest is included in installments.

Illustration: On Ist April, 2005 Mr. X purchased from M/s Y & Co. one 'Motor Truck' under hire-purchase system, Rs. 5,000 being paid on delivery and the balance in five annual installments of Rs. 7,500 each payable on 31st March each year. The cash price of the motor truck is Rs. 37,500 and vendors charge interest at the rate of 5 per cent per annum on yearly balances. Find out the amounts of principal and interest included in each installment.

(b) When interest is not included in installments: Where the total amount paid in the form of down payment and all installments is exactly equal to the cash price, it is regarded that the interest is not included in installments. It means that interest is payable in addition to the agreed amount of installment.

Question: On April 1,2005, A Transport Company purchased a Motor Lorry from Motor Supply Co. Ltd. on hire-purchase basis, the cash price being Rs. 60,000. Rs. 15,000 on signing of the contract and balance in three annual installments of Rs. 15,000 each on 31st March every year. In addition to it, interest at 5 per cent per annum was also payable to vendors on outstanding balances.

Branch Accounting

An accounting system in which separate accounts are maintained for each branch of a corporate entity or organization. The primary objectives of branch accounting are better accountability and control, since profitability and efficiency can be closely tracked at the branch level.

Branch accounting may involve added expenses for an organization in terms of accounting and infrastructure. This is because it may be necessary to appoint branch accountants to ensure accurate financial reporting and compliance with head office procedures and processes.

Types of Branches

The branches opened in the different parts of the nation, where the original undertaking being registered are called inland branches. These types of branches are also called home branches or national branches. There are two types of inland branches, which are:

a) Dependent branch b) Independent branch

a) Dependent Branch:

Dependent branches are the branches that do not keep their records but all the records are maintained by head office. They are not authorized to act solely without the prior permission of the head office. All the plans, policies, rules and regulations of these branches are totally formulated and executed by the head office. In other words, all the functions of dependent branch are totally controlled by head office.

b). Independent Branch:

The branches that can keep their accounts themselves and sell goods that are sent by the head office as well as those purchased by themselves are known as independent branches. These are the branches which can sell the goods to head office too. They can pay their own expenses and can deposit their collection in their own name in the bank. These branches record separately and independently all the transactions which are even recorded by the head office.

Systems of Accounting:

Stock and Debtors system is generally used when the goods are sent to the branch at pro-forma invoice price and the size of the branch is large. Under this system, the branch maintains a few central accounts to exercise greater control over the branch stock and other related expenses. These accounts are as follows:

1.Branch Stock Account

2.Branch Debtors Account

3.Branch Expenses Account

4.Branch Adjustment Account

5.Goods Sent to Branch Account

6.Branch Stock Reserve Account

Branch Stock Account

This account is on the pattern of a stock account. The account helps the Head Office in maintaining an effective control over the Branch Stock and tells about shortage and surplus in the branch stock because of the difference between the pro-forma invoice price and the selling price. Unlike traditional accounting practice, branch stock a/c is always maintained on the selling price or pro-forma invoice price. Selling price is used to record the goods sold by the branch to its customer and goods returned by the branch customers.

Branch Debtors Account

Branch debtors' a/c is maintained in the traditional manner to record transactions in

between branch and its credit customers

Branch Expense Account

The purpose of maintaining this account is nothing but the compile all branch expenses at one place. This will include all types of expenses i.e. cash based expenses and receivables based expenses

Branch Adjustment Account

Branch adjustment a/c replaces the branch income statement (profit & loss a/c). This is the account in which all expenses and losses are closed along with the margin that is a difference between cost and the selling price. This difference is split into two; one is termed as "surplus" that comes from the branch stock a/c representing the difference between selling price and pro-forma invoice price, the second is termed as "loading" that represents the difference between pro-forma invoice price and cost. This loading is calculated on opening and closing stock balances and also on the net of the goodssent branch.

Goods Sent to Branch Account

This is a supporting account, which is maintained to show second effects of the goods sent to branch and the goods returned from branch at pro-forma invoice price. Although the goods sent to and returned form the branch should be adjusted in the purchases a/c of the head office, but as we know that the branch stock a/c is not maintained at cost price, therefore, second effect of goods sent to and returned from branch is not recorded directly into the purchases a/c instead this second effect is recorded into the goods sent to branch a/c which after adjustment of the loading is finally closed into the purchases a/c.

Branch Stock Reserve Account

This is contra to branch stock account. In this account opening and closing balance of loading on branch stock is maintained.

Accounting Entries in books of head office under Debtors system of Branch Accounting

1) For Goods sent by Head Office to the Branch

Branch A/C Dr.

To Goods sent to the Branch A/C

2) For Goods returned by the Branch to H.O.

Goods sent to the Branch A/C Dr.

To Branch A/C

3) For Goods sent by the Branch to another Branch at instructions from the H.O.

Goods sent to Branch A/C Dr.

To Branch A/C

4) For Goods returned by the Branch Debtors to H.O. directly

Goods sent to Branch A/C Dr.

To Branch A/C

5) For Expenses at the Branch met by the H.O.

Branch A/C Dr.

To Bank A/C

6) For Assets at the Branch at end of accounting period

Branch Assets A/C Dr.

To Branch A/C

7) For Liabilities at the end of the accounting period

Branch A/C Dr.

To Branch Liabilities/C

8) For Profit/Loss

If Profit: Branch A/C Dr.

To General P&L A/C

If Loss: General P&L A/c

To Branch A/C

9) For transfer of Balance in Goods sent to Branch account

Goods sent to Branch A/C Dr.

To Purchases/Trading A/C

10) For remittance of cash or cheque to the branch

Branch A/C Dr.

To Cash/Bank A/C

Question: Excellent Garments of Multan has a branch at Lahore. Goods are supplied to the branch at cost. The expenses of the branch are paid from Multan and the branch keeps a sales journal and the debtors' ledger only. From the following information supplied by the branch, prepare a Branch Account in the books of the head office. Goods are sent to branch at pro-forma invoice price which is cost plus 20%.(All figures in rupees).

Opening Stock (at Pro-forma invoice) 28,800, Closing Debtors9,150

Closing Stock (at Pro-forma invoice) 21,600

Opening Debtors 6200

Goods received from HO(at Pro-forma invoice)

Bad Debt 140

Credit Sales 41,000

Expenses paid by Head office 10,400

Cash Sales 17,500

Cash received from Debtors 37,900

Pilferage of goods by the employees(Normal Loss) 2,000

Solution:

(Debtors System)

In the books of H.O. (Multan)

Lahore Branch Account

Particulars	Amount	Particulars	Amount
Opening Stock	24,000	Cash Recd.fromBranch	17500
Opening Debtors	6200	Cash Recd. From Debtors	37900
Cash sent to Branch	10400	Goods sent to Branch	6720
Goods sent to Branch	40,320	Closing Stock	18000
To general P&L A/C	8360	Closing Debtors	9160
	89280		**89280**

Debtors Account

Particulars	Amount	Particulars	Amount
Opening Debtors(bal.fig.6200)		Cash recd.from Debtors	37900
Credit Sales	41000	Bad Debt	140
		Closing Debtors (c/.f.)	9160
	47200		**47200**

Question: On 1st January, 2008 goods costing Rs. 132,000 were invoiced by Multan head office to its new branch at Lahore and charged at selling price to produce a gross profit of 25% on the selling price. At the end of the year, the return from Lahore Branch showed that the credit sales were Rs. 150,000. Goods invoiced at Rs. 2,000 to Lahore branch have been returned to Multan head office. The closing stock at Lahore branch was Rs. 24,000 at selling price. Record the above transactions in the books of

(i)Lahore Branch Stock Account; (ii) Goods Sent to Lahore Branch Account; (iii)Lahore Branch Adjustment Account; and (iv) Lahore Branch Debtors Account in the head office book and close the said accounts on 31st December 2008.

In the Books of the Head Office, Multan

Lahore Branch Stock Account

Particulars	Amount	Particulars	Amount
To Goods sent to Lahore Branch	176000	By goods sent to Lahore Branch	2000
		By a/c returns	150000
		By Branch Debtors(Cr.Sales)	24,000
	176000		**176000**

Goods Sent to Lahore Branch Account

Particulars	Amount	Particulars	Amount
To Lahore Branch Stock A/c(Returns)	2000	By Lahore Branch stock a/c	176000
To Lahore branch adj. a/c	43500		
To purchases (bal.fig.)	130500		
	176000		**176000**

Lahore Branch Debtors Account

Particulars	**Amount**	**Particulars**	**Amount**
To Lahore Branch Stock a/c	150000	By balance c/d	150000
	150000		150000

Lahore Branch adjustment Account

Particulars	**Amount**	**Particulars**	**Amount**
To Stock Reserve	6000	By goods sent to Delhi Branch	43500
To general P&L a/c	37500		
	43500		43500

Independent Branch Accounting:

Accounting Entries under Independent Branch:

A. **For goods supplied by head office to branch:**

Branch book:

Goods supplied by head office

A/C.....Dr. To Head office A/C

(Being receipt of goods)

Head office book:

Branch A/C.....Dr.

To goods supplied to branch A/C (Being goods sent to branch)

B. **For cash remitted by head office to branch:**

Branch book:

Cash A/C.....Dr.

To head office A/C

(Being cash received)

Head office book:

Branch A/C .....Dr.

To cash A/C

(Being cash sent to branch)

C. **For goods returned by branch:**

Branch book:

Head office A/C.....Dr.

To goods supplied to head office

A/C (Being goods return to head

office)

Head office book:

Goods supplied from branch

A/C.....Dr. To Branch A/C

(Being goods returned from branch)

D. **For cash remitted by branch to head office:**

Branch book:

Head office A/C.....Dr.

To cash

(Being cash sent to head office)

Head office book: Cash

A/C.....Dr. To

Branch A/C

(Being cash received from branch)

E. **For assets purchased by branch on behalf of head office:**

Branch book:

Head office A/C .....Dr.

To cash A/C

(Being purchase of assets)

Head office book:

Branch assets A/C.....Dr.

To branch A/C

(Being assets purchased by branch)

F. **For depreciation charged:**

Branch book:

Depreciation A/C .....Dr.

To Head office A/C

(Being depreciation on branch fixed assets)

Head Office book: Branch

A/C.....Dr. To

branch assets A/C

(Being depreciation of branch fixed assets)

G. **For expenses incurred by head office**

Branch book

Expenses A/C.....Dr.

To head office A/C

(Being expenses incurred by head office)

Head office book:

Branch A/C.....Dr.

To profit and loss A/C

(Being expenses incurred for branch)

Accounting For Partnership/LLP Firms:

An existing partnership firm may take up expansion/diversification of the business. In that case it may need managerial help or additional capital. An option before the partnership firm is to admit partner/partners, when a partner is admitted to the existing partnership firm, it is called admission of a partner.

According to the Partnership Act 1932, a person can be admitted into partnership only with the consent of all the existing partners unless otherwise agreed upon. On admission of a new partnerthe partnership firm is reconstituted with
a new agreement. For example, Rekha and Nitesh are partners sharing profit in the ratio of 5:3. On April 1, 2006 they admitted Nitu as a new partner with 1/4th share in the profit of the firm. In this case, with the admission
of Nitu as partner, the firm stands reconstituted.
On the admission of a new partner, the following adjustments become necessary:
(i) Adjustment in profit sharing ratio; (ii) Adjustment of Goodwill;
(iii) Adjustment for revaluation of assets and reassessment of
liabilities; (iv) Distribution of accumulated profits and reserves; and
(v) Adjustment of partners' capital

Question:

Deepak and Vivek are partners sharing profit in the ratio of 3 : 2. They admit Ashu as a new partner for 1/5 share in profit. Calculate the new profit sharing ratio and sacrificing ratio. **Solution:**

Calculation of new profit sharing ratio:

Let total Profit = 1
New partner's share = 1/5
Remaining share = 1 – 1/5 = 4/5
Deepak's new share = 3/5 of 4/5 i.e. 12/25

Vivek's new share = 2/5 of 4/5 i.e. 8/25
Ashu's Share = 1/5
The new profit sharing ratio of Deepak, Vivek and Ashu is : = 12/25 : 8/25 : 1/5 = 12 : 8 : 5/25 = 12 : 8 : 5
So Deepak Sacrificed = 3/5 – 12/25 = 15 – 12/25 = 3/25
Vivek Sacrificed = 2/5 – 8/25 = 10 – 8/25 = 2/25
Sacrificing Ratio = 3 : 2
Sacrificing ratio of the existing partners is same as their existing ratio.

When a new partner is admitted in the firm, the existing/old partners have to sacrifice, what is given to the new partner, from their future profits, the reputation they have gained in their past efforts and the side of capital they have taken before. The new partner when admitted, has to compensate for all these sacrifices made by the old ones. The compensation for such sacrifice can be termed as 'goodwill'. Hence, at the time of admission of the new partner, it is necessary to account the valuation of goodwill in the firm. If the new partner brings in cash for his share of goodwill, in addition to his capital, it is known as premium method. When the new partner brings nothing but only the capital, and the value of goodwill is erected or raised, this method of treatment is called Revaluation Method. However, once creating the value of goodwill and writing of the same after admission is done, it can be said to be Memorandum Revaluation Method. Thus, keeping in mind, all these methods, the

various ways of treating goodwill in the books of the firm at the time of admission of the new partner, are as follows:

1. Share of goodwill brought by the new partner in cash.
2. Share of goodwill brought by the new partner in kind.
3. Nothing is brought by the new partner as his share of goodwill.
4. Share of goodwill brought by the new partner in cash only a portion not as a whole.
5. Hidden goodwill

1. When the new partner brings his share of goodwill in cash

When the new partner brings his share of goodwill in cash, the payment ma be made to the old partners, as if outside/private transaction. It may be retained in the business or after recording the same in the firm, the old partners may withdraw the whole amount or some portion only,

a. When the amount of goodwill brought by the new partner is not recorded in the books and the payment is made to the old partners as outside or private transaction, it does not affect in the transaction of the firm and hence no entry is passed in the books of the firm

b.When the amount of goodwill brought in by the new partner is retained in the business to increase cash resources, and if there exists already no-goodwill:

i) Cash/Bank A/C.....Dr.
To Goodwill A/c
(Being goodwill brought in by the new
partner) ii) Goodwill A/C.....Dr.
To old partners' capital A/C
(Being goodwill credited to old partners in the sacrificing ratio)

c. When there is no-goodwill already appeared in the books and the amount of goodwill brought in by the new partner, is fully or partially withdrawn by the old partners:

i) Cash A/C.....Dr.

To Goodwill A/C

(Being goodwill brought by the new partner)

ii) Goodwill A/C.....Dr.

To old partners' capital A/C

(Being goodwill divided among old

partners) iii) Old partners' capital

A/C.....Dr.

To Cash/Bank A/C

(Being the amount withdrawn)

d. When there is goodwill already appeared in the books and even then if the new partner brings his share of goodwill in cash, the amount may be retained or withdrawn by the old partners. If the amount of goodwill brought in by the new partner is retained in the business:

i) Old partners' capital

A/C.....Dr. To Goodwill A/C

(Being goodwill appearing in the book written off in the old

ratio) ii) Cash/Bank A/C.....Dr.

To Goodwill A/C

(Being goodwill brought in by the new

partner) iii) Goodwill A/C.....Dr.

To old partners' capital A/C

(Being goodwill brought in by new partner shared by the old partners)

If the goodwill amount brought by the new partner is withdrawn by the old partners, the following extra entry should also be passed:

Old partners' capital

A/C.....Dr. To Cash/Bank

(Being amount withdrawn)

If they agree to show the original value of goodwill in the books, it is raised by passing the

entry: Goodwill A/C .....Dr.

To All partners capital A/C (Being goodwill raised)

2. When the new partner brings his share of goodwill in kind

The new partner may bring his share of goodwill and capital in kind i.e. the form of assets instead of cash. Again, new partner may have an established name in the market among the customers. In such case, he may be recognized for his goodwill. As a result he will bring a lesser amount of assets than the amount of credited to him. This requires two journal entries:

i) All assets A/C.....Dr.

Goodwill A/C/New partner's capital

A/C

(Being goodwill brought in kind by the new partner)

ii) Goodwill A/C/New partner's capital

A/C.....Dr. To old partners' capital A/C

(Being goodwill shared by the old partners)

3. When the new partner is unable to bring his share of goodwill in cash or kind

When the new partner cannot bring anything for his share of goodwill, first of all we have to see if there exists goodwill already or not. If there is no-goodwill already appearing in the books of the firm, goodwill is raised at its full value. If goodwill already appears in the books, it is compared to the full value of goodwill raised or created and the adjustment is done accordingly. **a**. When the new partner is unable to bring his share of goodwill and if there is no-goodwill already appearing in the books, goodwill is raised at its full value:

i) Goodwill A/C.....Dr.

To old partners' capital A/C

(Being goodwill is created at its full value and credited to the old partners in old ratio) * By this entry, goodwill A/C then appears as an asset in the balance sheet of the firm.

b. If the new partner cannot bring his share of goodwill and there appears goodwill already in the books, even then goodwill is raised at its full value. If the raised value of goodwill is equal to the existing value of goodwill, no entry what so ever is needed. If the raised

goodwill is more than the existing goodwill, then goodwill will be credited to the old partner's capital A/C by the excess amount only:

Goodwill A/C.....Dr. (excess value)
To old partners' capital A/C
(Being the value of goodwill increased to..../increased by.....)
* Goodwill then appears at its full value in the balance sheet of the firm

c. If the raised value of goodwill is less than the existing value of goodwill, then excess over raised value of goodwill is written off:
Old partners' capital
A/C.....Dr. To Goodwill A/C
(Being the goodwill written off by the reduction in value)

d. Whatever the case may be stated in a,b,c, the partners may not wish goodwill in the books for an indefinite period after the admission of new one, as the value of goodwill changes constantly. They may write off the whole or some portion of the value of goodwill. For writing off the goodwill:
All partners' capital
A/C.....Dr. To Goodwill A/C
(Being goodwill written off)

4. When the new partner can bring only a portion of his share of goodwill

When the new partner cannot bring the entire amount of his share of goodwill and he brings only a part of this, it is shared by the old partners in sacrificing ratio. Then goodwill A/C is raised in the books for the portion not brought by the new partner which is also credited to the old partners in their sacrificing ratio. Goodwill raised for the part of goodwill not brought in by the new partner is calculated as under:
= (Full value of goodwill/share of goodwill of new partner) X goodwill not brought in

But it should be remembered that , if there exists any goodwill in the books, first it

should be written off by crediting to the old partners in old ratio. Therefore, the entries are:

i) Old partners' capital

A/C.....Dr. To Goodwill A/C

(Being goodwill written off)

ii Cash/Bank A/C.....Dr.

To Goodwill A/C

(Being the portion of goodwill brought in by new

partner) iii) Goodwill A/C.....Dr.

To old partners' capital A/C

(Being the goodwill brought in by new partner credited to old partners)

iv) When the goodwill is raised for the part of goodwill not brought in by the new partner, the amount of goodwill is calculated as said above. The entry would be the same as in iii), only the amount being different, which is shared by the old partners in their old profit sharing ratio.

5. Hidden Goodwill

When the value of goodwill is not given in the question, the value of goodwill has to be calculated on the basis of total capital/net worth of the firm and profit sharing ratio.

A. New partner's capital X Reciprocal of the share of new partner....XXX

B. Less net worth(excluding goodwill) of new

firm.....XXX

C. A-B = Value of goodwill.....XXX

Retirement of a Partner:

When one or more partners leaves the firm and the remaining partners continue to do the business of the firm, it is known as retirement of a partner. Amit, Sunil and Ashu are partners in a firm. Due to some family problems, Ashu wants to leave the firm. The other partners decide to allow him to withdraw from the partnership. Thus, due to some reasons like old age, poor health, strained relations etc., an existing partner may decide to retire from the partnership. Due to retirement, the existing partnership comes to an end and the remaining partners form a new agreement and the partnership firm is reconstituted with new terms and conditions. At the time of retirement the retiring partner's claim is settled.

A partner retires either :
(i) with the consent of all partners, or (ii) as per terms of the agreement; or (iii) at his or her own will.

The terms and conditions of retirement of a partner are normally provided in the partnership deed. If not, they are agreed upon by the partners at the time of retirement. At the time of retirement the following accounting issues are dealt :
(a) New profit sharing ratio and gaining ratio. (b) Goodwill
(c) Adjustment of changes in the value of Assets and liabilities (d) Treatment of reserve and accumulated profits.
(e) Settlement of retiring partners dues, (f) New capital of the continuing partners.

New profit sharing ratio and gaining ratio

As soon as a partner retires the profit sharing ratio of the continuing partners get changed. The share of the retiring partner is distributed amongst the continuing partners. In the absence of information, the continuing partners take the retiring partner's share in their profit sharing ratio or in an agreed ratio. The ratio in which retiring partner's share is distributed amongst continuing partners is known as gaining ratio. It is

Gaining Ratio = New Ratio – Existing Ratio

Various cases of new ratio and gaining ratio are illustrated as follows: (i) Retiring partner's share distributed in Existing Ratio :

In this case, retiring partner's share is distributed in existing ratio amongst the remaining partners. The remaining partners continue to share profits and losses in the existing ratio.
The following example illustrates this :
Tanu, Manu and Rena are partners sharing profits and losses in the ratio of = 4 : 3 : 2. Tanu retires and remaining partners decide to take Tanu's share in the existing ratio i.e. 3 : 2. Calculate the new ratio of Manu and Rena.
Existing Ratio between Manu and Rena = 3/9 and 2/9 Tanu's Ratio (retiring partner) = 4/9
Tanu's share taken by the Manu and Rena in the ratio of 3 : 2 Manu's gets = $4/9 \times 3/5 = 12/45$
Manu's New Share = 3/9 + 12/45 = 27/45 Rena's gets = $4/9 \times 2/5 = 8/45$
Rena's New Share = 2/9 + 8/45 = 18/45
New ratio between Manu and Rena is 27/45 : 18/45 = 27 : 18 = 3 : 2. Gaining Ratio = New Ratio – Existing Ratio
Manu Gain = 27/45 – 3/9 = 12/45

Rena Gain = 18/45 – 2/9 = 8/45
12/45 : 8/45
3 : 2
You may note that the new ratio is similar to existing ratio that existed between Manu and Rena before Tanu's retirement.
Note: In absence of any information in the question, it will be presumed that retiring partner's share has been distributed in existing ratio.

(ii) Retiring partner's share distributed in Specified proportions: Sometimes the remaining partners purchase the share of the retiring partner in specified ratio. The share purchased by them is added to their old share and the new ratio is arrived at. The following example illustrates this:

A, B and C are partners in the firm sharing profits in the ratio of
3 : 2 : 1. B retired and his share was divided equally between A and C. Calculate the new profit sharing ratio of A and C.
B's Share = 2/6
B's share is divided between A and C in the ratio of 1 : 1. A gets 1/2 of 2/6 = 2/6 × 1/2 = 1/6
A's New Share = 3/6 + 1/6 = 4/6 C's gets 1/2 of 2/6 = 2/6 × 1/2 = 1/6 C's New share = 1/6+1/6 = 2/6

Gaining Ratio = New Ratio – Existing, Ratio

(iii)Retiring Partner's share is taken by one of the partners
The retiring partner's share is taken up by one of the remaining partners.
In this case, the retiring partner's share is added to that of partner's existing share. Only his/her share changes. The other partners continue to share profit in the existing ratio. An example illustrating this point is given below: Anuj, Babu and Rani share profit in the ratio of 5 : 4 : 2. Babu retires and his share is taken by Rani, So Rani's share is 2/11 + 4/11 = 6/11, Anuj share
will remain unchanged i.e, 5/11. Thus, the new profit sharing ratio of Anuj and Rani is 5 : 6.

Treatment of Goodwill

The retiring partner is entitled to his/her share of goodwill at the time of retirement because the goodwill is the result of the efforts of all partners including the retiring one in the past. The retiring partner is compensated for his/her share of goodwill. As per Accounting Standard 10 (AS-10), goodwill is recorded in the books only when some consideration in money is paid for it. Therefore, goodwill is recorded in the books only when it is purchased and the goodwill account cannot be raised on its own. Therefore, in case of retirement of a partner, the goodwill is adjusted

through partner's capital accounts. The retiring partner's capital account is credited with. his/her share of goodwill and remaining partner's capital account is debited in their gaining ratio. The journal entry is made as under:

Remaining Partners' Capital A/c Dr. (individually) To
Retiring Partner's Capital A/c
(Retiring partner's share of goodwill adjusted to remaining partners in the gaining ratio).

When the Goodwill Account already appears in the Books
Normally the goodwill is not shown in the books of the firm. If at the time of retirement/death of a partner, goodwill appears in the Balance Sheet of the firm, it will be written off by debiting all the partners' capital account in their existing profit sharing ratio and crediting the goodwill account. In such a case, the following journal entry is made:

Partners' Capital A/c Dr A/c)

To Goodwill A/c (including retiring partner's capital (Existing goodwill written-off)

Revaluation of Assets and Liabilities:

At the time of retirement of a partner the assets and liabilities of the firm are revalued and Revaluation Account is prepared in the same way as in case of admission of a partner. This is done to adjust the changes in value of assets and liabilities at the time of retirement/death of a partner.

Any profit or loss due to revaluation is divided amongst all the partners including Retiring/deceased in their existing profit sharing ratio. Following journal entries are made for this purpose :

(i) **For increase in value of assets:** Assets A/c Dr. [Individually]
To Revaluation A/c
(Increase in the value of assets)

(ii) **For decrease in value of assets:** Revaluation A/c Dr.
To Assets A/c (Individually)

(decrease in the value of asset)

(iii) **For increase in value of Liabilities**: Revaluation A/c Dr.

To Liabilities A/c [Individually]
(Increase in the value of liabilities)

(iv) **For decrease in value of Liabilities:**
Liabilities A/c Dr. [Individually]
To Revaluation A/c
(decrease in the value of liabilities)

Revaluation account is prepared to record the change in the value of assets or liabilities. It will reveal profit or loss on revaluation. This profit or loss
is divided amongst all partners including the retiring/deceased partner in existing profit sharing ratio.

(iv) **For Profit on Revaluation :** Revaluation A/c Dr. (Individually) To Partner's Capital A/c
(Profit on revaluation divided amongst all partners in their existing profit sharing ratio)

(v**) For loss on Revaluation:**
Partner's Capital A/c Dr. (Individually) To Revaluation A/c
(Loss on revaluation borne by all partners in their existing profit sharing ratio.

(vi**) For distribution of undistributed profit and reserve.** Reserves A/c Dr
Profit & Loss A/c (Profit) Dr.
To Partners' Capital A/c (individually)

(Reserves and Profit & Loss (Profit) transferred to all partners capitals A/c in existing profit sharing ratio)

(vii)**For distribution of undistributed loss** Partners' Capital A/c Dr. (individually)
To Profit & Loss A/c (Loss) [Profit & Loss (loss) transferred to all partners Capitals A/c in old profit sharing ratio]

MICRO ECONOMICS (105)

UNIT-1

Opportunity Cost

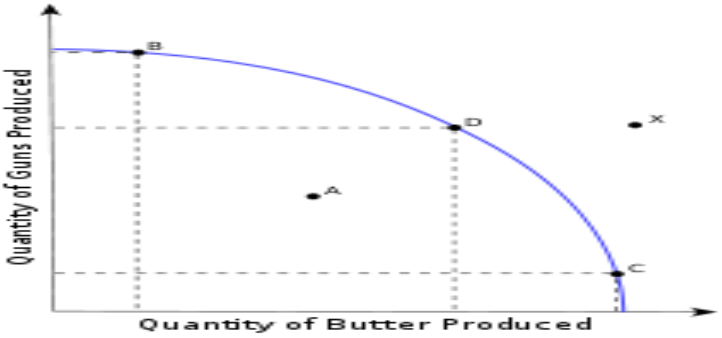
The cost of an alternative that must be forgone in order to pursue a certain action is called opportunity cost. Put another way, the benefits you could have received by taking an alternative action.
The difference in return between a chosen investment and one that is necessarily passed up, Say you invest in a stock and it returns a paltry 2% over the year. In placing your money in the stock, you gave up the opportunity of another investment - say, a risk-free government bond yielding 6%. In this situation, your opportunity costs are 4% (6% - 2%).

Marginalism

The concept of 'margin' is very popular in Economics. For example, in formal economic theory we learn that a business firm makes a decision to produce by equating marginal revenues with marginal costs. Marginal product is the addition made to total product (subtraction from the product) as a result of employing an additional (withdrawing the last factor of production.

In economic theory, the concept of' margin' is very useful; it renders the determination/derivation of an equilibrium solution quite simple and easy. However, in the real world of business management, marginalism should better be replaced by incrementalism, -In making economic decision, management is interested in knowing the impact of a chuck-change rather than a unit-change. Incremental reasoning involves a measurement of the impact of decision alternatives on economic variables like revenue and costs. Incremental revenues (or costs), for example, refer to the total magnitude of changes in total revenues (or costs) that result from a set of factors like change in prices, products, processes and patterns.

Production Possibility Frontier:-



A PPF (production possibility frontier) typically takes the form of the curve illustrated on the right. An economy that is operating on the PPF is said to be efficient, meaning that it would be impossible to produce more of one good without decreasing production of the other good. In contrast, if the economy is operating below the curve, it is said to be operating inefficiently because it could reallocate resources in order to produce more of both goods, or because some resources such as labor or capital are sitting idle and could be fully employed to produce more of both goods.

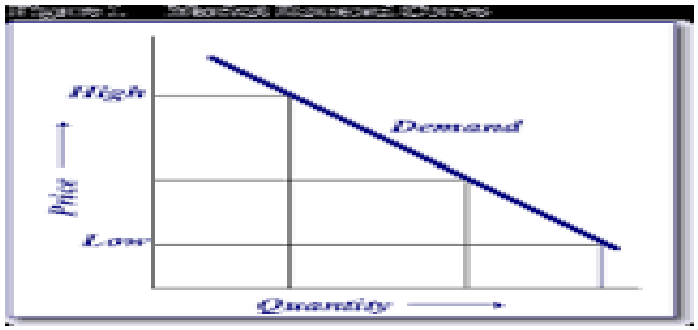
For example, assuming that the economy's available quantities of factors of production do not change over time and that technological progress does not occur, then if the economy is operating on the PPF production of guns would need to be sacrificed in order to produce more butter. If production is efficient, the economy can choose between combinations (i.e., points) on the PPF: *B* if guns are of interest, *C* if more butter is needed, *D* if an equal mix of butter and guns is required.[1]

In the PPF, all points *on* the curve are points of maximum productive efficiency (i.e., no more output of any good can be achieved from the given inputs without sacrificing output of some good); all points inside the frontier (such as *A*) can be produced but are productively *inefficient*; all points outside the curve (such as *X*) cannot be produced with the given, existing resources. Not all points on the curve are Pareto efficient, however; only in the case where the marginal rate of transformation is equal to all consumers' marginal rate of substitution and hence equal to the ratio of prices will it be impossible to find any trade that will make no consumer worse off.

Any point that lies either on the production possibilities curve or to the left of it is said to be an attainable point, meaning that it can be produced with currently available resources. Points that lie to the right of the production possibilities curve are said to be unattainable because they cannot be produced using currently available resources. Points that lie strictly to the left of the curve are said to be inefficient, because existing resources would allow for production of more of at least one good without sacrificing the production of any other good. An efficient point is one that lies on the production possibilities curve. At any such point, more of one good can be produced only by producing less of the other.

Law of Demand

"Other factors remaining constant there is an inverse relationship between the price of a good and demand."
As prices fall, we see an expansion of demand, If price rises, there will be a contraction of demand.
A change in the price of a good or service causes a movement along the demand curve:
Many other factors can affect total demand - when these change, the demand curve can shift.

1. 

Consumer Equilibrium –Cardinal Utility Approach

The theory of consumer's behavior seeks to explain the determination of consumer's equilibrium. Consumer's equilibrium refers to a situation when a consumer gets maximum satisfaction out of his given resources. A consumer spends his money income on different goods and services in such a manner as to derive maximum satisfaction. Once a consumer attains equilibrium position, he would not like to deviate from it. Economic theory has approached the problem of determination of consumer's equilibrium in two different ways:

(1) Cardinal Utility Analysis and
(2) Ordinal Utility Analysis

Accordingly, we shall examine these two approaches to the study of consumer's equilibrium in greater defeat.

Meaning of Utility:

The term utility in Economics is used to denote that quality in a good or service by virtue of which our wants are satisfied. In, other words utility is defined as the want satisfying power of a commodity.According to, Mrs. Robinson, "Utility is the quality in commodities that makes individuals want to buy them."

According to **Hibdon**, "Utility is the quality of a good to satisfy a want."

Concepts of Utility

There are three concepts of utility :

(1) **Initial Utility**: The utility derived from the first unit of a commodity is called initial utility.Utility derived from the first piece of bread is called initial utility. Thus, initial utility, is the utility obtained from the consumption of the first unit of a commodity. It is always positive.

(2) **Total Utility**: Total utility is the sum of utility derived from different Units of a commodity consumed by a household.

Suppose a consumer consume four units of apple. If the consumer gets 10 utils from the consumption of first apple, 8 utils from second, 6 utils from third, and 4 utils from fourth apple, then the total utility will be 10+8+6+4 = 28

Accordingly, total utility can be calculated as :
TU = MU1 + MU2 + MU3 + _____ + MUn
Or TU = _MU
Here TU = Total utility and MU1, MU2, MU3, + _____ MUn = Marginal Utility derived from first, second, third _____ and nth unit.

(3) Marginal Utility: Marginal Utility is the utility derived from the additional unit of a commodity consumed. The change that takes place in the total utility by the consumption of an additional unit of a commodity is called marginal utility. According to Chapman, "Marginal utility is the addition made to total utility by consuming one more unit of commodity. Supposing a consumer gets 10 utils from the consumption of one mango and 18 utils from two mangoes, then. the marginal utility of second .mango will be 18- 10=8 utils.

Marginal utility can be measured with the help of the following formula
MUnth = TUn – TUn-1
Here MUnth = Marginal utility of nth unit,
TUn = Total utility of 'n' units,
TUn-l = Total utility of n-i units,

Marginal utility can be (i) positive, (ii) zero, or (iii) negative.

(i)Positive Marginal Utility: If by consuming additional units of a commodity, total utility goes on increasing, marginal utility will be positive.
(ii) **Zero Marginal Utility**: If the consumption of an additional unit of a commodity causes no change in total utility, marginal utility will be zero.
(iii) **Negative Marginal Utility**: If the consumption of an additional unit of a commodity causes fall in total utility, the marginal utility will be negative.

Utility Analysis or Cardinal Approach

The Cardinal Approach to the theory of consumer behavior is based upon the concept of utility. It assumes that utility is capable of measurement. It can be added, subtracted, multiplied, and so on.

According to this approach, utility can be measured in cardinal numbers, like 1,2,3,4 etc. Fisher has used the term 'Util' as a measure of utility. Thus in terms of cardinal approach it can be said that one gets from a cup of tea 5 utils, from a cup of coffee 10 utils, and from a rasgulla 15 utils worth of utility.

Laws of Utility Analysis

Utility analysis consists of two important laws

1. Law of Diminishing Marginal Utility.
2. Law of Equi-Marginal Utility.

1. Law of Diminishing Marginal Utility:

Law of Diminishing Marginal Utility is an important law of utility analysis. This law is related to the satisfaction of human wants. All of us experience this law in our daily life. If you are set to buy, say, shirts at any given time, then as the number of shirts with you goes on increasing, the marginal utility from each successive shirt will go on decreasing. It is the reality of a man's life which is referred to in economics as law of Diminishing Marginal Utility. This law is also known as Gossen's First Law.

According to Chapman, "*The more we have of a thing, the less we want additional increments of it or the more we want not to have additional increments of it.*"
In short, the law of Diminishing Marginal Utility states that, other things being equal, when we go on consuming additional units of a commodity, the marginal utility from each successive unit of that commodity goes on diminishing.

Assumptions:

Every law in subject to clause "other things being equal" This refers to the assumption on which a law is based. It applies in this case as well. Main assumptions of this law are as follows:

1. Utility can be measured in cardinal number system such as 1, 2, 3_____ etc.
2. There is no change in income of the consumer.
3. Marginal utility of money remains constant.
4. Suitable quantity of the commodity is consumed.
5. There is continuous consumption of the commodity.
6. Marginal Utility of every commodity is independent.
7. Every unit of the commodity being used is of same quality and size.
8. There is no change in the tastes, character, fashion, and habits of the Consumer.
9. There is no change in the price of the commodity and its substitutes.

2. Law of Equi-Marginal Utility

This law states that the consumer maximizing his total utility will allocate his income among various commodities in such a way that his marginal utility of the last rupee spent on each commodity is equal. The consumer will spend his money income on different goods in such a way that marginal utility of each good is proportional to its price.

Limitations of Law of Equi-Marginal Utility

• It is difficult for the consumer to know the marginal utilities from different commodities because utility cannot be measured.

• Consumers are ignorant and therefore are not in a position to arrive at equilibrium.

• It does not apply to indivisible and inexpensive commodity.

Indifference Curve

An indifference curve is a geometrical presentation of a consumer is scale of preferences. It represents all those combinations of two goods which will provide equal satisfaction to a consumer. A consumer is indifferent towards the different combinations located on such a curve. Since each combination yields the same level of satisfaction, the total satisfaction derived from any of these combinations remains constant.

An indifference curve is a locus of all such points which shows different Combinations of two commodities which yield equal satisfaction to the consumer. Since the combination represented by each point on the indifference curve yields equal satisfaction, a consumer becomes indifferent about their choice. In other words, he gives equal importance to all the combinations on a given indifference curve.

According to ferguson, “An indifference curve is a combination of goods, each of which yield the same level of total utility to which the consumer is indifferent.”

Indifference Schedule

An indifference schedule refers to a schedule that indicates different combinations of two commodities which yield equal satisfaction. A consumer, therefore, gives equal importance to each of the combinations.

Assumptions:

Indifference curve approach has the following main assumptions:

1.Rational Consumer: It is assumed that the consumer will behave rationally. It means the consumer would like to get maximum satisfaction out of his total income.
2. **Diminishing Marginal rate of Substitution**: It means as the stock of a commodity increases with the consumer, he substitutes it for the other commodity at a diminishing rate.

4. **Independent Scale of Preference**: It means if the income of the consumer changes or prices of goods fall or rise in the market, these changes will have no effect on the scale of preference of the consumer. It is further assumed that scale of preference of a consumer is not influenced by the scale of preference of another consumer.

5. **Non-Satiety**: A consumer does not possess any good in more than the required quantity. He does not reach the level of satiety. Consumer prefers more quantity of a good to less quantity.
6. **Consistency in Selection**: There is a consistency in consumer's behavior. It means that if at any given time a consumer prefers A combination of goods to B combination, then at another time he will not prefer B combination to A combination.

7. **Transitivity**: It means if a consumer prefers A combination to B combination, and B Combination to C Combination, he will definitely prefer A combination to C combination. Likewise; if a consumer is indifferent towards A and B and he is also indifferent towards Band C, then he will also he indifferent towards A and C.

Properties of Indifference Curves

1. Indifference curve slopes downward from left to right, or an indifference curve has a Negative slope
2. Indifference curve is convex to the point of origin:
3. Two Indifference Curves never cut each other:
4. Higher Indifference Curves represent more satisfaction
5. Indifference Curve touches neither x-axis nor y-axis;
6. Indifference curves need not be parallel to each other:

Indifference Curve & Price Effect

A **price effect** represents change in consumer's optimal consumption combination on account of change in the price of a good and thereby changes in its quantity purchased, price of another good and consumer's income remaining unchanged. The consumer is better-off when optimal consumption combination is located on a higher indifference curve and vice versa.

Understand that a consumer's responses to a price change differ depending upon the nature of the good, viz. a normal good, inferior good or a neutral good.

Type Of price effect;

1. Positive
2. Negative
3. Zero

These are summarized in chart.1:

Impact of fall in price of good X on its quantity demanded		
Type of Price Effect	**Nature of Good X**	**Quantity Demanded of Good X**
Positive	Normal	↑
Negative	Inferior (including Giffen Goods)	↓
Zero	Neutral	No Change in Quantity Demanded

:

Thus, a price effect is positive in case of normal goods. There is inverse relationship between price and quantity demanded. It is negative in case of inferior goods (including Giffen goods) where we find direct relationship between price and quantity demanded. Finally, price effect is zero in case of neutral goods where consumer's quantity demanded is fixed.

Indifference Curve & Substitution Effect

The substitution effect relates to the change in the quantity demanded resulting from a change in the price of good due to the substitution of relatively cheaper good for a dearer one, while keeping the price of the other good and real income and tastes of the consumer as constant. Prof. Hicks has explained the substitution effect independent of the income effect through compensating variation in income. "The substitution effect is the increase in the quantity bought as the price of the commodity falls, after adjusting income so as to keep the real purchasing power of the consumer the same as before. This adjustment in income is called compensating variations and is shown graphically by a parallel shift of the new budget line until it become tangent to the initial indifference curve."

Thus on the basis of the methods of compensating variation, the substitution effect measure the effect of change in the relative price of a good with real income constant. The increase in the real income of the consumer as a result of fall in the price of, say good X, is so withdrawn that he is

neither better off nor worse off than before.

The substitution effect is explained in Figure 12.17 where the original budget line is PQ with equilibrium at point R on the indifference curve I1. At R, the consumer is buying OB of X and BR of Y. Suppose the price of X falls so that his new budget line is PQ1. With the fall in the price of X, the real income of the consumer increases. To make the compensating variation in income or to keep the consumer's real income constant, take away the increase in his income equal to PM of good Y or Q1N of good X so that his budget line PQ1 shifts to the left as MN and is parallel to it.

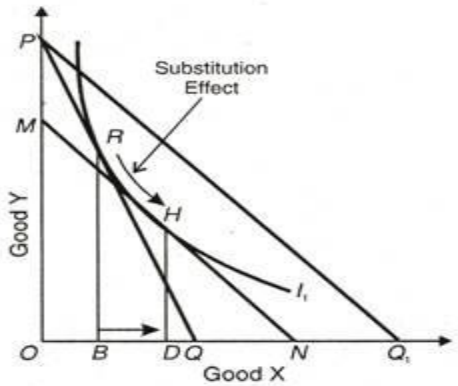


Fig. 12.17

At the same time, MN is tangent to the original indifference curve l1 but at point H where the consumer buys OD of X and DH of Y. Thus PM of Y or Q1N of X represents the compensating variation in income, as shown by the line MN being tangent to the curve I1 at point H. Now the consumer substitutes X for Y and moves from point R to H or the horizontal distance from B to D. This movement is called the substitution effect. The substitution affect is always negative because when the price of a good falls (or rises), more (or less) of it would be purchased, the real income of the consumer and price of the other good remaining constant. In other words, the relation between price and quantity demanded being inverse, the substitution effect is negative.

Unit-2

Individual demand curve

Individual demand curve refers to a graphical representation of individual demand schedule.
With the help of Table 3.1 (Individual demand schedule), the individual demand curve can be drawn as shown in Fig. 3.1.
As seen in the diagram, price (independent variable) is taken on the vertical axis (Y-axis) and quantity demanded (dependent variable) on the horizontal axis (X-axis). At each possible price, there is a quantity, which the consumer is willing to buy. By joining all the points (P to T), we get a demand curve 'DD'.

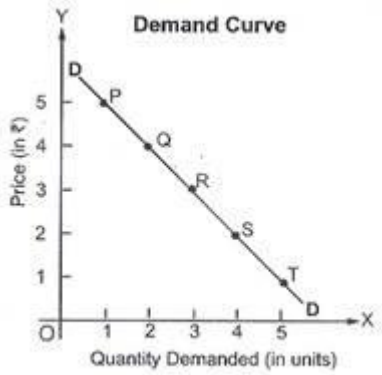


Fig. 3.1

The demand curve 'DD' slopes downwards due to inverse relationship between price and quantity demanded.

Market Demand Curve:

Market demand curve refers to a graphical representation of market demand schedule. It is obtained by horizontal summation of individual demand curves.

The points shown in Table 3.2 are graphically represented in Fig. 3.2. DA and DB are the individual demand curves. Market demand curve (DM) is obtained by horizontal summation of the individual demand curves (DA and DB).

Fig. 3.2

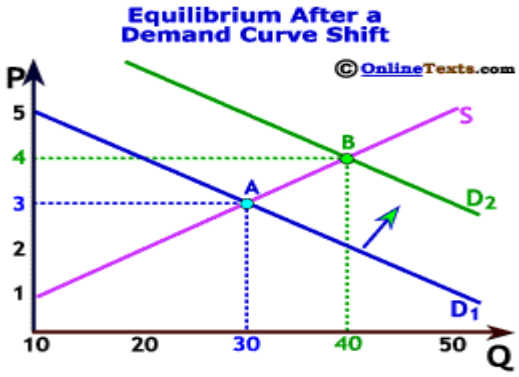
Market demand curve 'DM' also slope downwards due to inverse relationship between price and quantity demanded.

Market Demand Curve is Flatter:

Market demand curve is flatter than the individual demand curves. It happens because as price changes, proportionate change in market demand is more than proportionate change in individual demand.

Movement along Vs shift market demand curve

It is essential to distinguish between a *movement along* a demand curve and a *shift* in the demand curve. A change in price results in a movement along a fixed demand curve. This is also referred to as a *change in quantity demanded*. For example, an increase in video rental prices from $3 to $4 reduces quantity demanded from 30 units to 20 units. This price change results in a movement along a given demand curve. A change in any other variable that influences quantity demanded produces a shift in the demand curve or a *change in demand*. The terminology is subtle but extremely important. The majority of the confusion that students have with supply and demand concepts involves understanding the differences between shifts and movements along curves. Suppose that incomes in a community rise because a factory is able to give employees overtime pay. The higher incomes prompt people to rent more videos. For the *same rental price*, quantity demanded is now *higher* than before. Table 4 and the figure titled "Shift in the Demand Curve" represent that scenario. As incomes rise, the quantity demanded for videos priced at $4 goes from 20 (point A) to 40 (point A'). Similarly, the quantity demanded for videos priced at $3 rises from 30 to 50. The entire demand curve shifts to the right.
A shift in the demand curve changes the equilibrium position. As illustrated in the figure titled "Equilibrium After a Demand Curve Shift" the shift in the demand curve moves the market equilibrium from point A to point B, resulting in a higher price (from $3 to $4) and higher quantity (from 30 to 40 units). Note that if the demand curve shifted to the left, both the equilibrium price and quantity would decline.



Factors that Shift the Demand Curve

1. **Change in consumer incomes**: As the previous video rental example demonstrated, an

increase in income shifts the demand curve to the right. Because a consumer's demand for goods and services is constrained by income, higher income levels relax somewhat that constraint, allowing the consumer to purchase more products. Correspondingly, a decrease in income shifts the demand curve to the left. When the economy enters a recession and more people become unemployed, the demand for many goods and services shifts to the left.

2. **Population change**: An increase in population shifts the demand curve to the right. Imagine a college town bookstore in which most students return home for the summer. Demand for books shifts to the left while the students are away. When they return, however, demand for books increases even if the prices are unchanged. As another example, many communities are experiencing "urban sprawl" where the metropolitan boundaries are pushed ever wider by new housing developments. Demand for gasoline in these new communities increases with population. Alternatively, demand for gasoline falls in areas with declining populations.
3. **Consumer preferences**: If the preference for a particular good increases, the demand curve for that good shifts to the right. Fads provide excellent examples of changing consumer preferences. Each Christmas season some new toy catches the fancy of kids, and parents scramble to purchase the product before it is sold out. A few years ago, "Tickle Me Elmo" dolls were the rage. In the year 2000 the toy of choice was a scooter. For a given price of a scooter, the demand curve shifts to the right as more consumers decide that they wish to purchase that product for their children. Of course, demand curves can shift leftward just as quickly. When fads end suppliers often find themselves with a glut of merchandise that they discount heavily to sell.
4. **Prices of related goods:** If prices of related goods change, the demand curve for the original good can change as well. Related goods can either be substitutes or complements.
    - ***Substitutes*** are goods that can be consumed in place of one another. If the price of a substitute increases, the demand curve for the original good shifts to the right. For example, if the price of Pepsi rises, the demand curve for Coke shifts to the right. Conversely, if the price of a substitute decreases, the demand curve for the original good shifts to the left. Given that chicken and fish are substitutes, if the price of fish falls, the demand curve for chicken shifts to the left.
    - ***Complements*** are goods that are normally consumed together. Hamburgers and french fries are complements. If the price of a complement increases, the demand curve for the original good shifts to the left. For example, if McDonalds raises the price of its Big Mac, the demand for french fries shifts to the left because fewer people walk in the door to buy the Big Mac. In contrast, If the price of a complement decreases, the demand curve for the original good shifts to the right. If, for example, the price of computers falls, then the demand curve for computer software shifts to the right.

Elasticity of Demand

The elasticity of demand (Ed), also referred to as the price elasticity of demand, measures how responsive demand is to changes in a price of a given good. More precisely, it is the percent change

in quantity demanded relative to a one percent change in price, holding all else constant . Demand of goods can be classified as either perfectly elastic, elastic, unitary elastic, inelastic, or perfectly inelastic based on the elasticity of demand. This table shows the values of elasticity of demand that correspond to the different categories.
The graph illustrates the demand curves and places along the demand curve that correspond to the table. The elasticity of demand changes as one moves along the demand curve. This is an important concept - the elasticity of demand for a good changes as you evaluate it at different price points.

1.Percentage method or Arithmetic method
2. Total Expenditure method
3. Graphic method or point method.

1. **Percentage method:-**
According to this method price elasticity is estimated by dividing the percentage change in amount demanded by the percentage change in price of the commodity. Thus given the percentage change of both amount demanded and price we can derive elasticity of demand. If the percentage charge in amount demanded is greater than the percentage change in price , the coefficient thus derived will be greater than one.
If percentage change in amount demanded is less than percentage change in price, the elasticity is said to be less than one. But if percentage change of both amount demanded and price is same, elasticity of demand is said to be unit.

2. Total expenditure method
Total expenditure method was formulated by Alfred Marshall. The elasticity of demand can be measured on the basis of change in total expenditure in response to a change in price. It is worth noting that unlike percentage method a precise mathematical coefficient cannot be determined to know the elasticity of demand.

By the help of total expenditure method we can know whether the price elasticity is equal to one, greater than one, less than one. In such a method the initial expenditure before the change in price and the expenditure after the fall in price are compared. By such comparison, if it is found that the expenditure remains the same, elasticity of demand is One (ed=I).
If the total expenditure increases the elasticity of demand is greater than one (ed>l). If the total expenditure diminished with the change in price elasticity of demand is less than one (ed<I). The total expenditure method is illustrated by the following diagram.

3. Graphic method:
Graphic method is otherwise known as point method or Geometric method. This method was popularized by method. According to this method elasticity of demand is measured on different points on a straight line demand curve. The price elasticity of demand at a point on a straight line

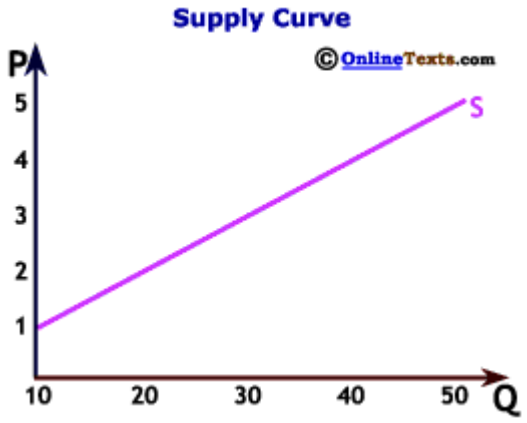
is equal to the lower segment of the demand curve divided by upper segment of the demand curve.

Thus at mid point on a straight-line demand curve, elasticity will be equal to unity; at higher points on the same demand curve, but to the left of the mid-point, elasticity will be greater than unity, at lower points on the demand curve, but to the right of the mid¬point, elasticity will be less than unity.

The theory & Law of Supply and the Supply Curve

Supply is slightly more difficult to understand because most of us have little direct experience on the supply side of the market. Supply is derived from a producer's desire to maximize profits. When the price of a product rises, the supplier has an incentive to increase production because he can justify higher costs to produce the product, increasing the potential to earn larger profits. Profit is the difference between revenues and costs. If the producer can raise the price and sell the same number of goods while holding costs constant, then profits increase. The *law of supply* holds that other things equal, as the price of a good rises, its quantity supplied will rise, and vice versa. Table 2 lists the quantity supplied of rental videos for various prices. At $5, the producer has an incentive to supply 50 videos. If the price falls to $4 quantity supplied falls to 40, and so on. The figure titled "Supply Curve" plots this positive relationship between price and quantity supplied.

TABLE 2 Supply of Videos	
Price	Quantity Supplied
$5	50
$4	40
$3	30
$2	20
$1	10



A *supply curve* is a graphical depiction of a supply schedule plotting price on the vertical axis and quantity supplied on the horizontal axis. The supply curve is upward-sloping, reflecting the law of supply.

Equilibrium Supply Curve & determination of Price and Quantity

What price should the seller set and how many videos will be rented per month? The seller could legally set any price she wished; however, market forces penalize her for making poor choices.

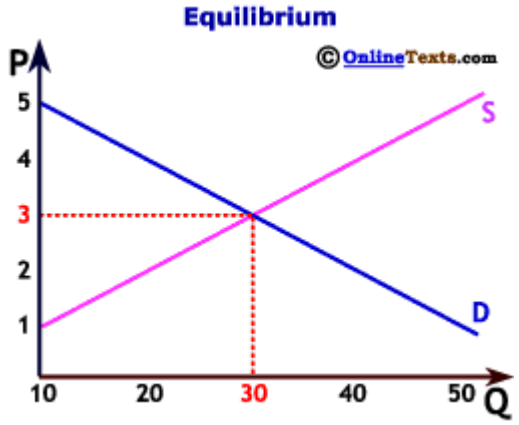
Suppose, for example, that the seller prices each video at $20. Odds are good that few videos will be rented. On the other hand, the seller may set a price of $1 per video. Consumers will certainly rent more videos with this low price, so much so that the store is likely to run out of videos. Through trial and error or good judgement, the store owner will eventually settle on a price that equates the forces of supply and demand.

In economics, an *equilibrium* is a situation in which:

- there is no inherent tendency to change,
- quantity demanded equals quantity supplied, and
- The market just clears.

At the market equilibrium, every consumer who wishes to purchase the product at the market price is able to do so, and the supplier is not left with any unwanted inventory. As Table 3 and the figure titled "Equilibrium" demonstrate, equilibrium in the video example occurs at a price of $3 and a quantity of 30 videos.

TABLE 3 Video Market Equilibrium		
Price	Quantity Demanded	Quantity Supplied
$5	10	50
$4	20	40
$3	**30**	**30**
$2	40	20
$1	50	10



Elasticity of Supply

Price elasticity of supply (**PES** or E_s) is a measure used in economics to show the responsiveness, or elasticity, of the quantity supplied of a good or service to a change in its price.

The elasticity is represented in numerical form, and is defined as the percentage change in the quantity supplied divided by the percentage change in price.

When the coefficient is less than one, the supply of the good can be described as *inelastic*; when the coefficient is greater than one, the supply can be described as *elastic*. An elasticity of zero indicates that quantity supplied does not respond to a price change: it is "fixed" in supply. Such

goods often have no labor component or are not produced, limiting the short run prospects of expansion. If the coefficient is exactly one, the good is said to be *unitary elastic*.

The quantity of goods supplied can, in the short term, be different from the amount produced, as manufacturers will have stocks which they can build up or run down.

Shift in the Supply Curve

1. **Change in input costs**: An increase in input costs shifts the supply curve to the left. A supplier combines raw materials, capital, and labor to produce the output. If a furniture maker has to pay more for lumber, then her profits decline, all else equal. The less attractive profit opportunities force the producer to cut output. Alternatively, car manufacturer may have to pay higher labor costs. The higher labor input costs reduces profits, all else equal. For a given price of a car, the manufacturer may trim output, shifting the supply curve to the left. Conversely, if input costs decline, firms respond by increasing output. The furniture manufacturer may increase production if lumber costs fall. Additionally, chicken farmers may boost chicken output if feed costs decline. The reduction in feed costs shifts the supply curve for chicken to the right.
2. **Increase in technology**: An increase in technology shifts the supply curve to the right. A narrow definition of technology is a cost-reducing innovation. Technological progress allows firms to produce a given item at a lower cost. Computer prices, for example, have declined radically as technology has improved, lowering their cost of production. Advances in communications technology have lowered the telecommunications costs over time. With the advancement of technology, the supply curve for goods and services shifts to the right.
3. **Change in size of the industry**: If the size of an industry grows, the supply curve shifts to the right. In short, as more firms enter a given industry, output increases even as the price remains steady. The fast-food industry, for example, exploded in the latter half of the twentieth century as more and more fast food chains entered the market. Additionally, on-line stock trading has increased as more firms have begun delivering that service. Conversely, the supply curve shifts to the left as the size of an industry shrinks. For example, the supply of manual typewriters declined dramatically in the 1990s as the number of producers dwindled.

Unit-3

Meaning and Concept of Production

Production

Production is transformation of tangible inputs (raw materials, semi-finished goods, Sub

assemblies) and intangible inputs (ideas, information, knowledge) into output(goods or services) in a specific period of time at given state of technology. Resources are used in this process to create an output that is suitable for use or has exchange value.

Factor of production

In economics, factors of production are the inputs to the production process. Finished goods are the output. Input determines the quantity of output i.e. output depends upon input. Input is the starting point and output is the end point of production process and such input-output relationship is called a production function. The product of one industry may be used in another industry.
For E.G., wheat is a output for a framer; but when it is used to produce bread it becomes a factor of production.

There are three basic factors of production:
• Land
• Labor
• Capital
•Entrepreneur

All three of these are required in combination at a time to produce a commodity.
'Factors of production' may also refer specifically to the 'primary factors', which are stocks including land, labor (the ability to work), and capital goods applied to production. Materials and energy are considered secondary factors in classical economics because they are obtained from land, labor and capital. The primary factors facilitate production but neither become part of the product (as with raw materials) nor become significantly transformed by the production process (as with fuel used to power machinery).

Four factors of production

1. **Land**
2. **Labor**
3. **Capital**
4. **Entrepreneur**

According to **Prof. Benham**, "Anything that contributes towards output is a factor of production."

Cooperation among factors is essential to produce anything because production is not a job of single factor.

Production Function

Production is transformation of tangible inputs (raw materials, semi-finished goods, Sub assemblies) and intangible inputs (ideas, information, knowledge) into output(goods or services) in a specific period of time at given state of technology. Output is thus, a function of inputs. Technical relation between inputs and outputs is depicted by production function. It denotes effective combination of inputs.

In economics, a **production function** relates physical output of a production process to physical inputs or factors of production. In macroeconomics, aggregate production functions are estimated to create a framework in which to distinguish how much of economic growth to attribute to changes in factor allocation (e.g. the accumulation of capital) and how much to attribute to advancing technology. Some non-mainstream economists, however, reject the very concept of an aggregate production function.

Concept of production functions

In general, economic output is not a (mathematical) function of input, because any given set of inputs can be used to produce a range of outputs. To satisfy the mathematical definition of a function, a production function is customarily assumed to specify the maximum output obtainable from a given set of inputs. A production function can be defined as the specification of the minimum input requirements needed to produce designated quantities of output, given available technology. In the production function, itself, the relationship of output to inputs is non-monetary; that is, a production function relates physical inputs to physical outputs, and prices and costs are not reflected in the function.

In the decision frame of a firm making economic choices regarding production—how much of each factor input to use to produce how much output—and facing market prices for output and inputs, the production function represents the possibilities afforded by an exogenous technology. Under certain assumptions, the production function can be used to derive a marginal product for each factor. The profit-maximizing firm in perfect competition (taking output and input prices as given) will choose to add input right up to the point where the marginal cost of additional input matches the marginal product in additional output. This implies an ideal division of the income generated from output into an income due to each input factor of production, equal to the marginal product of each input.

The inputs to the production function are commonly termed factors of production and may represent primary factors, which are stocks. Classically, the primary factors of production were Land, Labor and Capital. Primary factors do not become part of the output product, nor are the primary factors, themselves, transformed in the production process.
Production function differs from firm to firm, industry to industry. Any change in the state of technology or managerial ability disturbs the original production function. Production function

can be represented by schedules, graph, tables, mathematical equations, TP, AP & MP Curves, isoquant and so on.

Specifying the production function

A production function can be expressed in a functional form as the right side of

Q = f (K, L, I, O)
Where:
Q = quantity of output
K, L, I, O stand for quantities of factors of production (capital, labour, land or organization respectively) used in production

Stages of production
To simplify the interpretation of a production function, it is common to divide its range into 3 stages as follows:

Stage 1 (from the origin to point B): the variable input is being used with increasing output per unit, the latter reaching a maximum at point B (since the average physical product is at its maximum at that point). Because the output per unit of the variable input is improving throughout stage 1, a price-taking firm will always operate beyond this stage.
Stage 2: output increases at a decreasing rate, and the average and marginal physical product are declining. However, the average product of fixed inputs (not shown) is still rising, because output is rising while fixed input usage is constant. In this stage, the employment of additional variable inputs increases the output per unit of fixed input but decreases the output per unit of the variable input. The optimum input/output combination for the price-taking firm will be in stage 2, although a firm facing a downward-sloped demand curve might find it most profitable to operate in Stage 1.

Stage 3: too much variable input is being used relative to the available fixed inputs. Variable inputs are over-utilized in the sense that their presence on the margin obstructs the production process rather than enhancing it. The output per unit of both the fixed and the variable input declines throughout this stage. **At the boundary between stage 2 and stage 3, the highest possible output is being obtained from the fixed input.**

ISO QUANTS
An isoquant (iso product) is a curve on which the various combinations of labour and capital show the same output. According to Cohen and Cyert, "An isoproduct curve is a curve along which the maximum achievable rate of production is constant." It is also known as a production indifference curve or a constant product curve. Just as indifference curve shows the various combinations of any two commodities that give the consumer the same amount of satisfaction (iso-utility), similarly

an isoquant indicates the various combinations of two factors of production which give the producer the same level of output per unit of time. Table 24.1 shows a hypothetical isoquant schedule of a firm producing 100 units of a good.

TABLE 24.1: Isoquant Schedule:

Combination	Units of Capital	Units of Labour	Total Output (in units)
A	9	5	100
B	6	10	100
C	4	15	100
D	3	20	100

This Table 24.1 is illustrated on Figure 24.1 where labour units are measured along the X-axis and capital units on the K-axis. The first, second, third and the fourth combinations are shown as A, S, C and D respectively. Connect all these points and we have a curve IQ.

This is an isoquant. The firm can produce 100 units of output at point A on this curve by having a combination of 9 units of capital and 5 units of labour. Similarly, point B shows a combination of 6 units of capital and 10 units of labour; point C,4 units of capital and' 15 units of labour; and point D, a combination of 3 units of capital and 20 units of labour to yield the same output of 100 units.

An isoquant map shows a number of isoquants representing different amounts of output. In Figure 24.1, curves IQ, IQ1 and IQ2 show an isoquant map. Starting from the curve IQ which yields 100 units of product, the curve IQ1, shows 200 units and the IQ2 curve 300 units of the product which can be produced with altogether different combinations of the two factors.

Properties of Isoquants:

Isoquants possess certain properties which are similar to those of indifference curves.

(1) Isoquants are negatively inclined:

If they do not have a negative slope, certain logical absurdities follow. If the isoquant slopes upward to the right, it implies that both capital and labour increase but they produce the same output. In Figure 24.2 (A), combination B on the IQ curve having a larger amount of both capital and labour (OC1 +OL1 > OC + OL) will yield more output than before. Therefore, point A and B on the IQ curve cannot be of equal product.

Suppose the isoquant is vertical as shown in Figure 24.2 (B), which implies a given amount of labour is combined with different units of capital. Since OL of labour and OC1 of capital will produce a larger amount than produced by OL of labour and OC of capital, the isoquant IQ cannot be a constant product curve.

Take Figure 24.2 (C) where the isoquant is horizontal which means combining more of labour with the same quantity of capital. Here OC of capital and OL1 of labour will produce a larger or smaller amount than produced by the combination OC of capital and OL of labour. Therefore, a horizontal isoquant cannot be an equal product curve.

Thus it is clear that an isoquant must slope downward to the right as shown in Figure 24.2 (D) where points A and B on the IQ curve are of equal quantity. As the amount of capital decreases

from OC to OC1 and that of labour increases from OL to OL1 so that output remains constant.

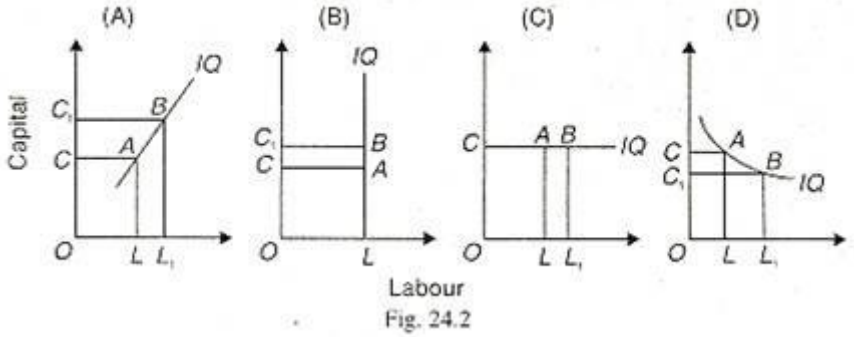


Fig. 24.2

(2) An Isoquant lying above and to the right of another represents a higher output level. In Figure 24.3 combination B on IQ1 curve shows larger output than point A on the curve IQ. The combination of OC of capital and OL of labour yields 100 units of product while OC1 of capital and OL1 of labour produce 200 units. Therefore, the isoquant IQ1 which lies above and to the right of the isoquant IQ, represents a larger output level.

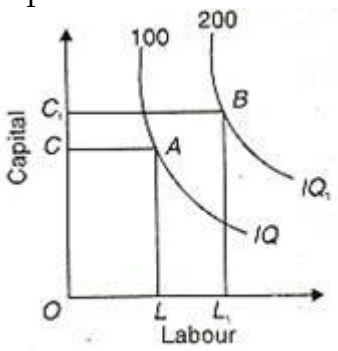


Fig. 24.3

(3) No two isoquants can intersect each other. The absurd conclusion that follows when two isoquants cut each other is explained with the aid of Figure 24.4. On the isoquant IQ, combination A =B. And on the isoquant IQ1 combination R=S. But combination S is preferred to combination B, being on the higher portion of isoquant IQ1. On the other hand, combination A is preferred to R, the former being on the higher portion of the isoquant IQ. To put it algebraically, it means that S> B and R< A. But this is logically absurd because S combination is as productive as R and A combination produces as much as B. Therefore, the same combination cannot both be less and more productive at the same time. Hence two isoquants cannot intersect each other.

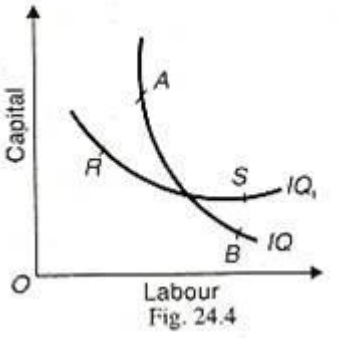


Fig. 24.4

(4) Isoquants need not be parallel because the rate of substitution between two factors is not

necessarily the same in all the isoquant schedules.

(5) In between two isoquants there can be a number of isoquants showing various levels of output which the combinations of the two factors can yield. In fact, in between the units of output 100, 200, 300, etc. represented on isoquants there can be innumerable isoquants showing 120, 150, 175,235, or any other higher or lower unit.

(6) Units of output shown on isoquants are arbitrary. The various units of output such as 100, 200, 300, etc., shown in an isoquant map are arbitrary. Any units of output such as 5, 10, 15, 20 or 1000, 2000, 3000, or any other units can he taken.

(7) No isoquant can touch either axis. If an isoquant touches X-axis, it would mean that the product is being produced with the help of labour alone without using capital at all. This is a logical absurdity for OL units of labour alone are incapable of producing anything. Similarly, OC units of capital alone cannot produce anything without the use of labour. Therefore IQ and lQ1 cannot be isoquants, as shown in Figure 24.5.

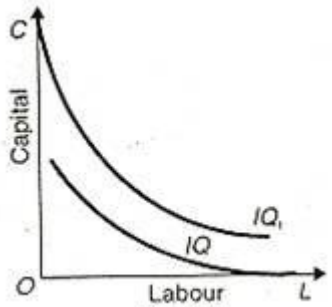


Fig. 24.5

(8) **Each isoquant is convex to the origin**:

As more units of labour are employed to produce 100 units of the product, lesser and lesser units of capital are used. This is because the marginal rate of substitution between two factors diminishes. In Figure 24.6, in order to produce 100 units of the product, as the producer moves along the isoquant from combination A to B and to C and D, he gives up smaller and smaller units of capital for additional units of labour. To maintain the same output of 100 units, BR less of capital and relatively RC more of labour is used.

If he were producing this output with the combination D, he would be employing CT less of capital and relatively TD more of labour. Thus the isoquants are convex to the origin due to diminishing marginal rate of substitution. This fact becomes clear from successively smaller triangles below the IQ curve Δ ASB > ΔBRC > Δ CTD.

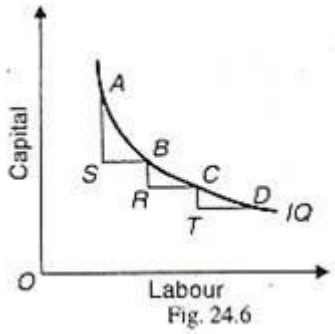


Fig. 24.6

(9) Each isoquant is oval-shaped:

It is elliptical which means that at some point it begins to recede from each axis. This shape is a consequence Labour of fact that if a producer uses more of capital or more of labour or more Fig. 24.6 of both than is necessary, the total product will eventually decline.

The firm will produce only in those segments of the isoquants which are convex to the origin and lie between the ridge lines.

This is the economic region of production. In Figure 24.7, oval-shaped isoquants are shown. Curves OA and OB are the ridge lines and in between them economically feasible units of capital and labour can be employed to produce 100, 200, 300 and 400 units of the product. For example, OT units of labour and ST units of the capital can produce 100 units of the product, but the same output can be obtained by using the same quantity of labour OT and less quantity of capital VT.

Thus only an unwise entrepreneur will produce in the dotted region of the isoquant 100. The dotted segments of an isoquant are the waste- bearing segments. They form the uneconomic regions of production. In the upper dotted portion, more capital and in the lower dotted portion more labour than necessary is employed. Hence GH, JK, LM, and NP segments of the elliptical curves are the iso- quants.

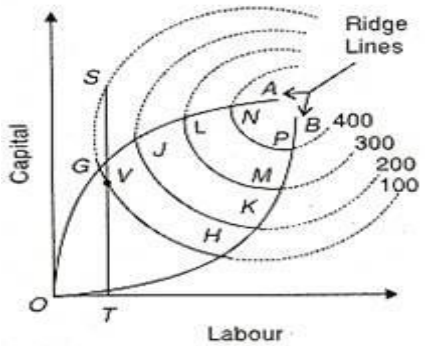


Fig. 24.7

Isocost Curves:

Having studied the nature of isoquants which represent the output possibilities of a firm from a given combination of two inputs, we pass on to the prices of the inputs as represented on the isoquant map by the isocost curves. These curves are also known as outlay lines, price lines, input-price lines, factor-cost lines, constant-outlay lines, etc. Each isocost curve represents the different combinations of two inputs that a firm can buy for a given sum of money at the given price of each input.

Figure, 24.8 (A) shows three isocost curves AB, CD and EF, each represents a total outlay of 50, 75 and 100 respectively. The firm can hire OC of capital or OD of labour with Rs. 75. OC is 2/3 of OD which means that the price of a unit of labour is 1½ times less than that of a unit of capital. The line CD represents the price ratio of capital and labour. Prices of factors remaining the same, if the total outlay is raised, the isocost curve will shift upward to the right as EF parallel to CD, and if the total outlay is reduced it will shift downwards to the left as AB. The isocosts are straight lines because factor prices remain the same whatever the outlay of the firm on the two factors. The isocost curves represent the locus of all combinations of the two input factors which result in the same total cost. If the unit cost of labour (L) is w and the unit cost of capital (C) is r, then the total cost: TC = wL + rC. The slope of the isocost line is the ratio of prices of labour and capital i.e., w/r.

The point where the isocost line is tangent to an isoquant represents the least cost combination of the two factors for producing a given output. If all points of tangency like LMN are joined by a line, it is known as an output- factor curve or least-outlay curve or the expansion path of a firm. Salvatore defines expansion path as "the locus of points of producer's equilibrium resulting from changes in total outlays while keeping factor prices constant." It shows how the proportions of the two factors used might be changed as the firm expands.

For example, in Figure 24.8 (A) the proportions of capital and labour used to produce 200 (IQ1) units of the product are different from the proportions of these factors used to produce 300 (IQ2) units or 100 (OQ) units at the lowest cost.

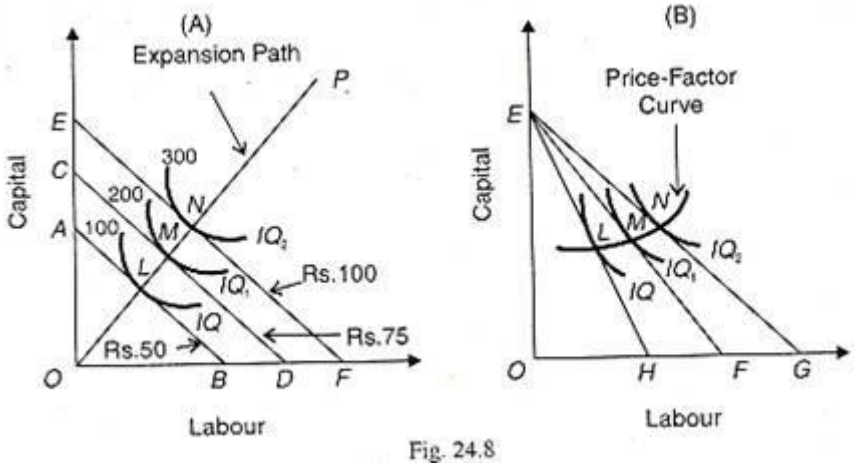


Fig. 24.8

Like the price-income line in the indifference curve analysis, a relative cheapening of one of the factors to that of another will extend the isocost line to the right. If one of the factors becomes relatively dearer, the isocost line will contract inward to the left. Given the price of capital, if the price of labour falls, the isocost line EF in Panel (B) will extend to the right as EG and if the price of labour rises, the isocost line EF will contract inward to the left as EH. if the equilibrium points L, M, and N are joined by a line, it is called the price-factor curve.

The Principle of Marginal Rate of Technical Substitution:

The principle of marginal rate of technical substitution (MRTS or MRS) is based on the production function where two factors can be substituted in variable proportions in such a way as to produce a constant level of output. The marginal rate of technical substitution between two factors C (capital) and L (labour), MRTSLC is the rate at which L can be substituted for C in the production of good X without changing the quantity of output. As we move along an isoquant downward to the right, each point on it represents the substitution of labour for capital. MRTS is the loss of certain units of capital which will just be compensated for by additional units of labour at that point. In other words, the marginal rate of technical substitution of labour for capital is the slope or gradient of the isoquant at a point. Accordingly, slope = MRTSLC = – Δ C/A L. This can be understood with the aid of the isoquant schedule, in Table 24.2.

TABLE 24.2: Isoquant Schedule:

Combination	Labour	Capital	MRTSLC	Output
1	5	9	__	100
2	10	6	3:5	100
3	15	4	2:5	100

4	20	3	L;5	100

The above table shows that in the second combination to keep output constant at 100 units, the reduction of 3 units of capital requires the addition of 5 units of labour, MRTSLC = 3:5. In the third combination, the loss of 2 units of capital is compensated for by 5 more units of labour, and so on.

In Figure 24.9 at point B, the marginal rate of technical substitution is AS/SB, at point G, it is BT/TG and at H, it is GR/ RH.

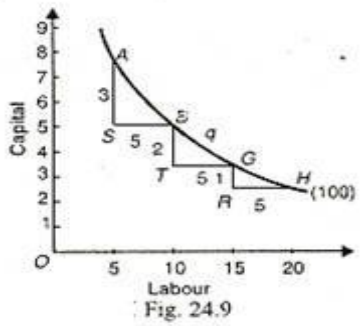


Fig. 24.9

The isoquant reveals that as the units of labour are successively increased into the factor-combination to produce 100 units of good X, the reduction in the units of capital becomes smaller and smaller. It means that the marginal rate of technical substitution is diminishing. This concept of the diminishing marginal rate of technical substitution (DMRTS) is parallel to the principle of diminishing marginal rate of substitution in the indifference curve technique.

This tendency of diminishing marginal substitutability of factors is apparent from Table 24.2 and Figure 24.9. The MRTSLC continues to decline from 3:5 to 1:5 whereas in the Figure 24.9 the vertical lines below the triangles on the isoquant become smaller and smaller as we move downward so that GR < BT < AS. Thus, the marginal rate of technical substitution diminishes as labour is substituted for capital. It means that the isoquant must be convex to the origin at every point.

The Law of Variable Proportions:

The behaviour of the law of variable proportions or of the short-run production function when one factor is constant and the other variable can also be explained in terms of the isoquant analysis. Suppose capital is a fixed factor and labour is a variable factor. In Figure 24.10., OA and OB are the ridge lines and it is in between them that economically feasible units of labour and capital can be employed to produce 100, 200, 300, 400 and 500 units of output.

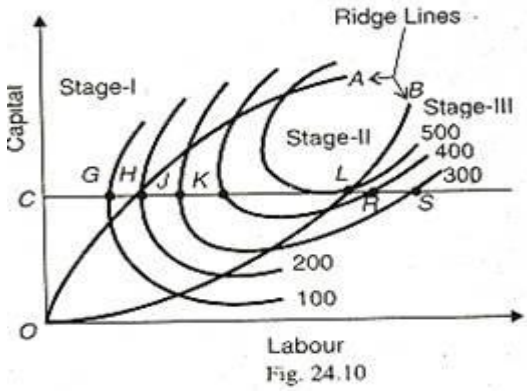


Fig. 24.10

It implies that in these portions of the isoquants, the marginal product of labour and capital is positive. On the other hand, where these ridge lines cut the isoquants, the marginal product of the

inputs is zero. For instance, at point H the marginal product of capital is zero, and at point L the marginal product of labour is zero. The portion of the isoquant that lies outside the ridge lines, the marginal product of that factor is negative. For instance, the marginal product of capital is negative at G and that of labour at R.

The law of variable proportions says that, given the technique of production, the application of mote and more units of a variable factor, say labour, to a fixed factor, say capital, will, until a certain point is reached, yield more than proportional increases in output, and thereafter less than proportional increases in output.

Since the law refers to increases in output, it relates to the marginal product. To explain the law, capital is taken as a fixed factor and labour as a variable factor. The isoquants show different levels of output in the figure. OC is the fixed quantity of capital which therefore forms a horizontal line CD. As we move from C to D towards the right on this line, the different points show the effects of the combinations of successively increasing quantities of labour with fixed quantity of capital OC.

To begin with, as we move from C to G to H, it shows the first stage of increasing marginal returns of the law of variable proportions. When CG labour is employed with OC capital, output is 100. To produce 200 units of output, labour is increased by GH while the amount of capital is fixed at OC.

The output has doubled but the amount of labour employed has not increased proportionately. It may be observed that GH < CG, which means that smaller additions to the labour force have led to equal increment in output. Thus C to H is the first stage of the law of variable proportions in which the marginal product increases because output per unit of labour increases as more output is produced.

The second stage of the law of variable proportions is the portion of the isoquants which lies in between the two ridge lines O A and OB. It is the stage of diminishing marginal returns between points H and L. As more labour is employed, output increases less than proportionately to the increase in the labour employed. To raise output to 300 units from 200 units, HJ labour is employed. Further, JK quantity of labour is required to raise output from 300 to 400 and KL of labour to raise output from 400 to 500.

So, to increase output by 100 units successively, more and more units of the variable factor (labour) are required to be applied along with the fixed factor (capital) , that is KL>JK>HJ. It implies that the marginal product of labour continues to decline with the employment of larger quantities to it. Thus as we more from point H to K, the effect of increasing the units of labour is that output per unit of labour diminishes as more output is produced. This is known as the stage of diminishing returns.

If labour is employed further, we are outside the lower ridge line OB and enter the third stage of the law of variable proportions. In this region which lies beyond the ridge line OB there is too much of the variable factor (labour) in relation to the fixed factor (capital). Labour is thus being overworked and its marginal product is negative. In other words when the quantity of labour is increased by LR and RS, the output declines from 500 to 400 and to 300. This is the stage of negative marginal returns.

We arrive at the conclusion that a firm will find it profitable to produce only in the second stage of the law of variable proportions for it will be uneconomical to produce in the regions to the left or right of the ridge lines which form the first stage and the third stage of the law respectively.

The Laws of Returns to Scale:

The laws of returns to scale can also be explained in terms of the isoquant approach. The laws of returns to scale refer to the effects of a change in the scale of factors (inputs) upon output in the long-run when the combinations of factors are changed in some proportion. If by increasing two factors, say labour and capital, in the same proportion, output increases in exactly the same proportion, there are constant returns to scale. If in order to secure equal increases in output, both factors are increased in larger proportionate units, there are decreasing returns to scale. If in order to get equal increases in output, both factors are increased in smaller proportionate units, there are increasing returns to scale.

The returns to scale can be shown diagrammatically on an expansion path "by the distance between successive 'multiple-level-of-output' isoquants, that is, isoquants that show levels of output which are multiples of some base level of output, e.g., 100, 200, 300, etc."

Increasing Returns to Scale:

Figure 24.11 shows the case of increasing returns to scale where to get equal increases in output, lesser proportionate increases in both factors, labour and capital, are required.

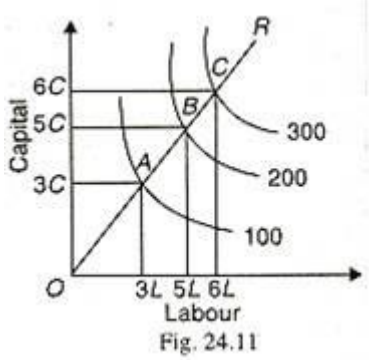


Fig. 24.11

It follows that in the figure:

100 units of output require 3C +3L

200 units of output require 5C + 5L

300 units of output require 6C + 6L

So that along the expansion path OR, OA > AB > BC. In this case, the production function is homogeneous of degree greater than one.

The increasing returns to scale are attributed to the existence of indivisibilities in machines, management, labour, finance, etc. Some items of equipment or some activities have a minimum size and cannot be divided into smaller units. When a business unit expands, the returns to scale increase because the indivisible factors are employed to their full capacity.

Increasing returns to scale also result from specialisation and division of labour. When the scale of the firm expands there is wide scope for specialisation and division of labour. Work can be divided into small tasks and workers can be concentrated to narrower range of processes. For this, specialized equipment can be installed. Thus with specialization, efficiency increases and increasing returns to scale follow.

Further, as the firm expands, it enjoys internal economies of production. It may be able to install better machines, sell its products more easily, borrow money cheaply, procure the services of more efficient manager and workers, etc. All these economies help in increasing the returns to scale more than proportionately.

Not only this, a firm also enjoys increasing returns to scale due to external economies. When the industry itself expands to meet the increased 'long-run demand for its product, external economies appear which are shared by all the firms in the industry. When a large number of firms are concentrated at one place, skilled labour, credit and transport facilities are easily available. Subsidiary industries crop up to help the main industry. Trade journals, research and training centres appear which help in increasing the productive efficiency of the firms. Thus these external economies are also the cause of increasing returns to scale.

Decreasing Returns to Scale:

Figure 24.12 shows the case of decreasing returns where to get equal increases in output, larger proportionate increases in both labour and capital are required.

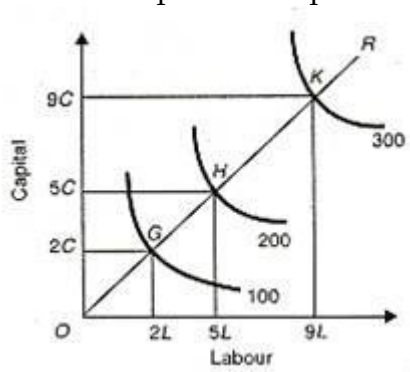


Fig. 24.12

It follows that:

100 units of output require 2C + 2L

200 units of output require 5C + 5L

300 units of output require 9C + 9L

So that along the expansion path OR, OG < GH < HK.

In this case, the production function is homogeneous of degree less than one.

Returns to scale may start diminishing due to the following factors. Indivisible factors may become inefficient and less productive. The firm experiences internal diseconomies. Business may become unwieldy and produce problems of supervision and coordination. Large management creates difficulties of control and rigidities. To these internal diseconomies are added external diseconomies of scale. These arise from higher factor prices or from diminishing productivities of the factors.

As the industry continues to expand the demand for skilled labour, land, capital, etc. rises. There being perfect competition, intensive bidding raises wages, rent and interest. Prices of raw materials also go up. Transport and marketing difficulties emerge. All these factors tend to raise costs and the expansion of the firms leads to diminishing returns to scale so that doubling the scale would not lead to doubling the output.

Constant Returns to Scale:

Figure 24.13 shows the case of constant returns to scale. Where the distance between the isoquants 100, 200 and 300 along the expansion path OR is the same, i.e., OD = DE = EF. It means that if units of both factors, labour and capital, are doubled, the output is doubled. To treble output, units of both factors are trebled.

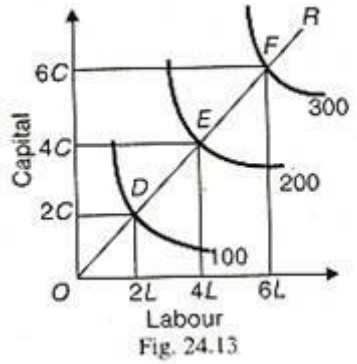


Fig. 24.13

It follows that:

100 units of output require 1 (2C + 2L) = 2C + 2L

200 units of output require 2(2C + 2L) = 4C + 4L

300 units of output require 3(2C + 2L) = 6C + 6L

The returns to scale are constant when internal economies enjoyed by a firm are neutralised by internal diseconomies so that output increases in the same proportion. Another reason is the balancing of external economies and external diseconomies. Constant returns to scale also result when factors of production are perfectly divisible, substitutable, homogeneous and their supplies are perfectly elastic at given prices.

That is why, in the case of constant returns to scale, the production function is homogeneous of degree one.

Relation between Returns to Scale and Returns to a Factor (Law of Returns to Scale and Law of Diminishing Returns):

Returns to a factor and returns to scale are two important laws of production. Both laws explain the relation between inputs and output. Both laws have three stages of increasing, decreasing and constant returns. Even then, there are fundamental differences between the two laws.

Returns to a factor relate to the short period production function when one factor is varied keeping the other factor fixed in order to have more output, the marginal returns of the variable factor diminish. On the other hand, returns to scale relate to the long period production function when a firm changes its scale of production by changing one or more of its factors.

We discuss the relation between the returns to a factor (law of diminishing returns) and returns to scale (law of returns to scale) on the assumptions that:

(1) There are only two factors of production, labour and capital.

(2) Labour is the variable factor and capital is the fixed factor.

(3) Both factors are variable in returns to scale.

(4) The production function is homogeneous.

Given these assumptions, we first explain the relation between constant return to scale and returns to a variable factor in terms of Figure 24.14 where OS is the expansion path which shows constant returns to scale because the difference between the two isoquants 100 and 200 on the expansion path is equal i.e., OM = MN. To produce 100 units, the firm uses OC + OL quantities of capital and labour and to double the output to 200 units, double the quantities of labour and capital are required so that OC1 + OL2 lead to this output level at point N. Thus there are constant returns to scale because OM = MN.

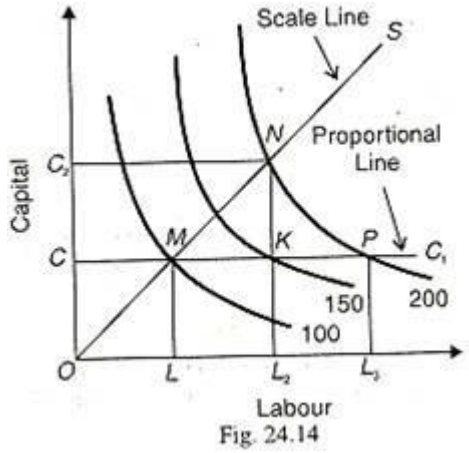


Fig. 24.14

To prove that returns to the variable factor, labour, diminish, we take OC of capital as the fixed factor, represented by the CC, line. Keeping C as constant, if the amount of labour is doubled by LL2, we reach point K which lies on a lower isoquant 150 than the isoquant 200. By keeping C constant, Ц if the output is to be doubled from 100 to 200 units, then L3 units o of labour will be required. But L3 > L2. Thus by doubling the units of labour with constant C2, the output less than doubles. It is 150 units at point K instead of 200 units at point P. This shows that the marginal returns of the variable factor, labour, have diminished.

As pointed out by Stonier and Hague, "So, if production function were always homogeneous of the first degree and if returns to scale were always constant, marginal physical productivity (returns) would always fall."

The relation between diminishing returns to scale and return to a variable factor is explained with the help of Figure 24.15 where OS is the expansion path which depicts diminishing returns to scale because the segment MN>OM. It means that in order to double the output from 100 to 200, more than double the amounts of both factors are required.

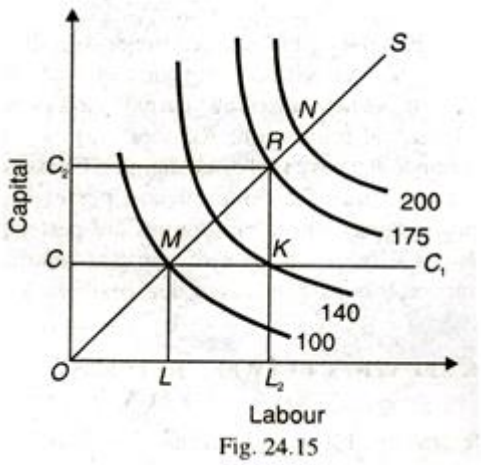


Fig. 24.15

Alternatively, if both factors are doubled to OC2+ OL2 they lead to the lower output level isoquant 175 at point R than the isoquant 200 which shows diminishing returns to scale. If C is kept constant and the amount of variable factor, labour, is doubled by LL2 we reach point K which lies on a still lower level of output represented by the isoquant 140. This proves that the marginal returns (or physical productivity) of the variable factor, labour, have diminished.

3. Now we take the relation between increasing returns to scale and returns to a variable factor.

This is explained in terms of Figure 24.16 (A) and (B). In Panel (A), the expansion path OS depicts increasing returns to scale because the segment OM > MN. It means that in order to double the output from 100 to 200, less than double the amounts of both factors will be required. If C is kept constant and the amount of variable factor, labour, is doubled by LL2 the level of output is reached at point K which shows diminishing marginal returns as represented by the lower isoquant 160 than the isoquant 200 when returns to scale are increasing.

In case the returns to scale are increasing strongly, that is, they are highly positive they will offset the diminishing marginal returns of the variable factor, labour. Such a situation leads to increasing marginal returns. This is explained in Panel (B) of Figure 24.16 where on the expansion path OS, the segment OM > MN, thereby showing increasing returns to scale. When the amount of the variable factor, labour, is doubled by LL2 while keeping C as constant, we reach the output level K represented by the isoquant 250 which is at a higher level than the isoquant 200. This shows that the marginal returns of the variable factor, labour, have increased even when there are increasing returns to scale.

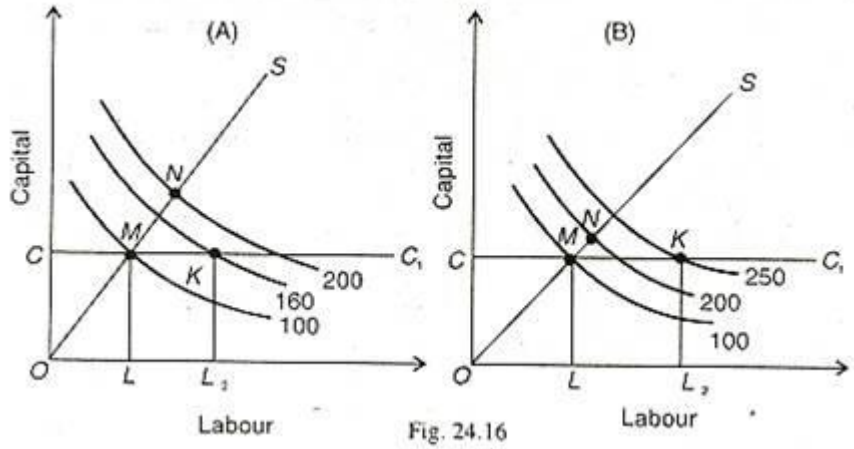


Fig. 24.16

Conclusion:

It can be concluded from the above analysis that under a homogeneous production function when a fixed factor is combined with a variable factor, the marginal returns of the variable factor diminish when there are constant, diminishing and increasing returns to scale. However, if there are strong increasing returns to scale, the marginal returns of the variable factor increase instead of diminishing.

Choice of Optimal Factor Combination or Least Cost Combination of Factors or Producer's Equilibrium:

A profit maximisation firm faces two choices of optimal combination of factors (inputs): First, to minimise its cost for a given output; and second, to maximise its output for a given cost. Thus the least cost combination of factors refers to a firm producing the largest volume of output from a given cost and producing a given level of output with the minimum cost when the factors are combined in an optimum manner. We study these cases separately.

Cost-Minimisation for a Given Output:

In the theory of production, the profit maximisation firm is in equilibrium when, given the cost-price function, it maximises its profits on the basis of the least cost combination of factors. For this, it will choose that combination which minimises its cost of production for a given output. This will

be the optimal combination for it.

Assumptions:

This analysis is based on the following assumptions:

1. There are two factors, labour and capital.
2. All units of labour and capital are homogeneous.
3. The prices of units of labour (w) and that of capital (r) are given and constant.
4. The cost outlay is given.
5. The firm produces a single product.
6. The price of the product is given and constant.
7. The firm aims at profit maximisation.
8. There is perfect competition in the factor market.

Given these assumptions, the point of least-cost combination of factors for a given level of output is where the isoquant curve is tangent to an isocost line. In Figure 24.17, the isocost line GH is tangent to the isoquant 200 at point M. The firm employs the combination of OC of capital and OL of labour to produce 200 units of output at point M with the given cost- outlay GH. At this point, the firm is minimising its cost for producing 200 units. Any other combination on the isoquant 200, such as R or T, is on the higher isocost line KP which shows higher cost of production. The isocost line EF shows lower cost but output 200 cannot be attained with it. Therefore, the firm will choose the minimum cost point M which is the least-cost factor combination for producing 200 units of output. M is thus the optimal combination for the firm.

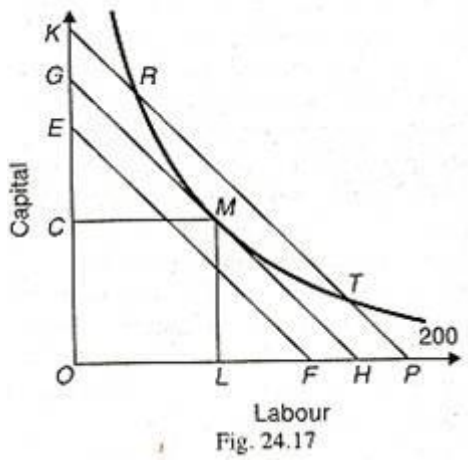


Fig. 24.17

The point of tangency between the isocost line and the isoquant is an important first order condition but not a necessary condition for the producer's equilibrium. There are two essential or second order conditions for the equilibrium of the firm.

1. The first condition is that the slope of the isocost line must equal the slope of the isoquant curve. The Slope of the isocost line is equal to the ratio of the price of labour (w) to the price of capital (r) i.e., w/r. The slope of the isoquant curve is equal to the marginal rate of technical substitution of labour and capital (MRTSLC) which is, in turn, equal to the ratio of the marginal product of labour to the marginal product of capital (MPL/MPC). Thus the equilibrium condition for optimality can be written as:

The second condition is that at the point of tangency, the isoquant curve must he convex to the

origin. In other words, the marginal rate of technical substitution of labour for capital (MRTSLC) must be diminishing at the point of tangency for equilibrium to be stable. In Figure 24.18, S cannot be the point of equilibrium, for the isoquant IQ1, is concave where it is tangent to the isocost line GH. At point S, the marginal rate of technical substitution between the two factors increases if move to the right m or left on the curve lQ1.

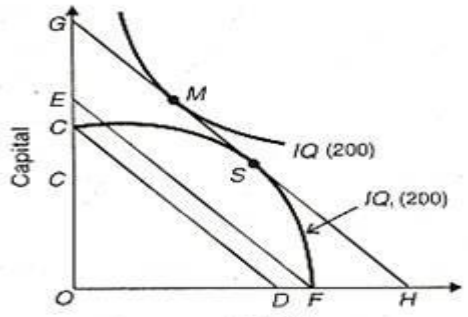


Fig. 24.18

Moreover, the same output level can be produced at a lower cost CD or EF and there will be a corner solution either at C or F. If it decides to produce at EF cost, it can produce the entire output with only OF labour. If, on the other hand, it decides to produce at a still lower cost CD, the entire output can be produced with only OC capital. Both the situations are impossibilities because nothing can be produced either with only labour or only capital. Therefore, the firm can produce the same level of output at point M where the isoquant curve IQ is convex to the origin and is tangent to the isocost line GH. The analysis assumes that both the isoquants represent equal level of output, IQ = IQ1.

Output-Maximisation for a Given Cost:

The firm also maximises its profits by maximising its output, given its cost outlay and the prices of the two factors. This analysis is based on the same assumptions, as given above. The conditions for the equilibrium of the firm are the same, as discussed above.

1. The firm is in equilibrium at point P where the isoquant curve 200 is tangent to the isocost line CL. At this point, the firm is maximising its output level of 200 units by employing the optimal combination of OM of capital and ON of labour, given its cost outlay CL. But it cannot be at points E or F on the isocost line CL, since both points give a smaller quantity of output, being on the isoquant 100, than on the isoquant 200. The firm can reach the optimal factor combination level of maximum output by moving along the isocost line CL from either point E or F to point P. This movement involves no extra cost because the firm remains on the same isocost line. The firm cannot attain a higher level of output such as isoquant 300 because of the cost constraint.

Thus the equilibrium point has to be P with optimal factor combination OM + ON. At point P, the slope of the isoquant curve 200 is equal to the slope of the isocost line CL. It implies that w/r=MPL/MPC=MRTSLC

2.The second condition is that the isoquant curve must be convex to the origin at the point of tangency with the isocost line, as explained above in terms of Figure 24.18.

UNIT -4

Concept of Cost

The term 'cost' means the amount of expenses [actual or national] incurred on or attributable to specified thing or activity. A producer requires various factors of production or inputs for producing commodity. He pays them in a form of money. Such money expenses incurred by a firm in the production of a commodity are called cost of production.

As per Institute of cost and work accounts (ICWA) India, Cost is 'measurement in monetary terms of the amount of resources used for the purpose of production of goods or rendering services. To get the results we make efforts. Efforts constitute cost of getting the results. It can be expressed in terms of money; it means the amount of expenses incurred on or attributable to some specific thing or activity.

Short run cost & long run cost

Short-run cost

Short run cost varies with output, when unlike long run cost all the factors are not variable. This cost becomes relevant, when a firm has to decide whether or not to produce more in the immediate future. This cost can be divided into two components of fixed and variable cost on the basis of variability of factors of production.

1. **Fixed cost:** In the short period the expenses incurred on fixed factors are called the fixed cost. These costs don't change with changes in level of output.
"The fixed cost is those cost that don't vary with the size of output."

2. **Variable cost:** VC are those costs which are incurred on the use of variable factors of production. They directly change with production. The rate of increase of total variable cost is determined by the law of returns.

3. **Total cost**: TC of a firm for various levels of output are the sum of total fixed cost and total variable cost.

4. **Average cost:** per unit cost of a good is called its average cost. Average cost is total cost divided by output.

AC= TC/Q
AC= AFC+AVC

a) **Average fixed cost:** AFC is total fixed cost /total output. AFC is the per unit cost of the fixed factor of production.

b) **Average variable cost:** AVC is found by dividing the total variable cost by the total unit of output.

5. **Marginal cost:** MC is the addition made to the total cost by the production of one more unit of a commodity.

MC = TCn – (TCn -1)
MC = _TC/_Q

Long-run cost
In the long run, all factors of production are variable. Hence there is no distinction between fixed and variable cost. All cost are variable cost and there is nothing like fixed cost.

a) Long run average cost
b) Long run marginal cost

a) **Long run avg. cost**: LRAC refers to minimum possible per unit cost of producing different quantities of output of a good in the long period.

b) **Long run marginal cost**: change in the total cost in the long run, due to the production of one more unit, is called LRMC.

Economies and Diseconomies of Scale
• Economies of scale are the **cost advantages** that a business can exploit by **expanding the scale of production**

• The effect is to **reduce the long run average (unit) costs of production**.
• These lower costs are an improvement in **productive efficiency** and can benefit consumers in the form of lower prices. But they give a business a competitive advantage tool.

Internal Economies of Scale.
Internal economies of scale arise from **the growth of the business itself.** Examples include:

1. **Technical economies of scale**:

a. Large-scale businesses can afford to invest in **expensive and specialist capital machinery**. For example, a supermarket chain such as Tesco or Sainsbury can invest in technology that improves stock control. It might not, however, be viable or cost-efficient for a small corner shop to buy this technology.

b. **Specialization of the workforce**: Larger businesses split complex production processes into separate tasks to boost productivity. The **division of labour** in mass production of motor vehicles and in manufacturing electronic products is an example.

c. **The law of increased dimensions**. This is linked to the **cubic law** where doubling the height and width of a tanker or building leads to a more than proportionate increase in the cubic capacity – this is an important scale economy in distribution and transport industries and also in travel and leisure sectors.

2. **Marketing economies of scale and monopsony power**: A large firm can spread its advertising and marketing budget over a large output and it can purchase its inputs in bulk at negotiated discounted prices if it has **monopsony (buying) power** in the market.

A good example would be the ability of the electricity generators to negotiate lower prices when negotiating coal and gas supply contracts. The big food retailers have monopsony power when purchasing supplies from farmers.

3. **Managerial economies of scale**: This is a form of division of labour. Large-scale manufacturers employ specialists to supervise production systems and oversee human resources.

4. **Financial economies of scale**: Larger firms are usually rated by the financial markets to be more 'credit worthy' and have access to credit facilities, with favorable rates of borrowing. In contrast, smaller firms often face higher rates of interest on overdrafts and loans. Businesses quoted on the stock market can normally raise fresh money (i.e. extra financial capital) more cheaply through the issue of equities. They are also likely to pay a lower rate of interest on new company bonds issued through the capital markets.

5. **Network economies of scale**: *This is a demand-side economy of scale.* Some networks and services have huge potential for economies of scale. That is, as they are more widely used they become more valuable to the business that provides them. The classic examples are the expansion of a common language and a common currency. We can identify networks economies in areas such as **online auctions**, **air transport networks**. Network economies are best explained by saying that the **marginal cost of adding one more user** to the network is close to zero, but the resulting benefits may be huge because each new user to the network can then interact, trade with **all** of the existing members or parts of the network. The expansion of **e-commerce** is a great example of network economies of scale

External economies of scale

• External economies of scale occur **within an industry** and from the expansion of it

• Examples include the development of **research and development facilities in local universities** that

several businesses in an area can benefit from and spending by a local authority on improving the transport network for a local town or city.

• Likewise, the **relocation of component suppliers** and other support businesses close to the main centre of manufacturing are also an external cost saving.

Diseconomies of scale

A firm may eventually experience a rise in average costs caused by diseconomies of scale.
Diseconomies of scale a firm might be caused by:

1. **Control** – monitoring the productivity and the quality of output from thousands of employees in big corporations is imperfect and costly.

2. **Co-operation** - workers in large firms may feel a sense of alienation and subsequent loss of morale. If they do not consider themselves to be an integral part of the business, their productivity may fall leading to wastage of factor inputs and higher costs. A fall in productivity means that workers may be less productively efficient in larger firms.

3. **Loss of control over costs** – big businesses may lose control over fixed costs such as expensive head offices, management expenses and marketing costs. There is also a risk that very expensive capital projects involving new technology may prove ineffective and leave the business with too much under-utilized capital.

Evaluation: Do economies of scale always improve the welfare of consumers?

• **Standardization of products:** Mass production might lead to a **standardization of products** – limiting the amount of consumer choice.

• **Lack of market demand:** Market demand may be insufficient for economies of scale to be fully exploited leaving businesses with a lot of spare capacity.

• **Developing monopoly power:** Businesses may use economies of scale to build up monopoly power and this might lead to higher prices, a reduction in consumer welfare and a loss of allocative efficiency.

• **Protecting monopoly power:** Economies of scale might be used as a **barrier to entry** –whereby existing firms can drive prices down if there is a threat of the entry of new suppliers.

Explicit Cost and Implicit Cost

Explicit cost:

All those expenses that a firm incurs to make payment to others are called explicit cost. An explicit

cost is a direct payment made to others in the course of running a business, such as wage, rent and materials. Explicit costs are taken into account along with implicit ones when considering economic profit. Accounting profit only takes explicit costs into account.

Implicit cost:
Implicit cost is the cost of entrepreneur's own factors or resources. These includes the rewards for the entrepreneurs self owned land, building, labour & capital. In economics, an **implicit cost**, also called an **imputed cost**, **implied cost.**
Implicit costs also represent the divergence between economic profit (total revenues minus total costs, where total costs are the sum of implicit and explicit costs) and accounting profit (total revenues minus only explicit costs). Since economic profit includes these extra opportunity costs, it will always be less than or equal to accounting profit.

Private and Social Cost
Private cost refers to the cost of production incurred & provided for by an individual firm engaged in the production of a commodity. It is found out to get private profits. It includes both explicit as well as implicit cost. A firm is interested in minimizing private cost. Social cost refers to the cost of producing a commodity to the society as a whole. It takes into consideration of all those costs which were borne by the society directly or indirectly. It is a sum of private cost & external cost. for example, from pollution of the atmosphere.

SOCIAL COST = PRIVATE COST + EXTERNALITY
For example: - a chemical factory emits wastage as a by-product into nearby rivers and into the atmosphere. This creates negative externalities which impose higher social costs on other firms and consumers. e.g. clean up costs and health costs.
Another example of higher social costs comes from the problems caused by traffic congestion in towns, cities and on major roads and motor ways. It is important to note though that the manufacture, purchase and use of private cars can also generate external benefits to society. This why **cost-benefit analysis** can be useful in measuring and putting some monetary value on both the social costs and benefits of production.

Key Concepts:
Private Costs + External Costs = Social Costs
If external costs > 0, then private costs < social costs.
Then society tends to:
• Price the good or service too low and Produces or consumes too much of the good or service.

Different Costs Matter:
Private costs for a producer of a good, service, or activity include the costs the firm pays to purchase capital equipment, hire labor, and buy materials or other inputs. While this is straightforward from the business side, it also is important to look at this issue from the consumers'

perspective. Field, in his 1997 text, Environmental Economics provides an example of the private costs a consumer faces when driving a car:
The private costs of this (driving a car) include the fuel and oil, maintenance, depreciation, and even the drive time experienced by the operator of the car.
Private costs are paid by the firm or consumer and must be included in production and consumption decisions. In a competitive market, considering only the private costs will lead to a socially efficient rate of output only if there are no external costs.

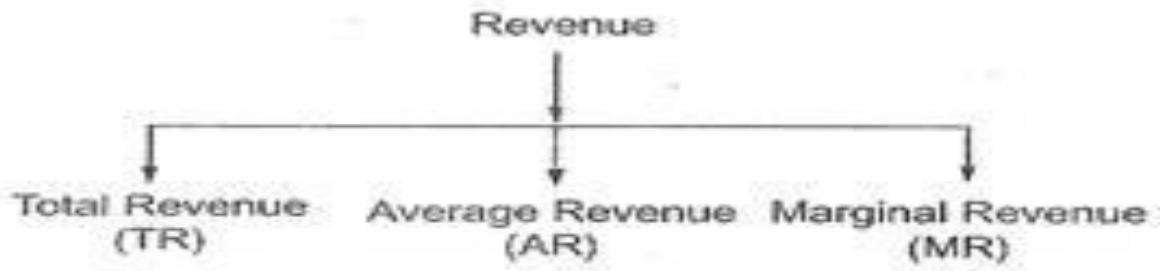
External costs, on the other hand, are not reflected on firms' income statements or in consumers' decisions. However, external costs remain costs to society, regardless of who pays for them. Consider a firm that attempts to save money by not installing water pollution control equipment. Because of the firm's actions, cities located down river will have to pay to clean the water before it is fit for drinking, the public may find that recreational use of the river is restricted, and the fishing industry may be harmed. When external costs like these exist, they must be added to private costs to determine social costs and to ensure that a socially efficient rate of output is generated.

Social costs include both the private costs and any other external costs to society arising from the production or consumption of a good or service. Social costs will differ from private costs, for example, if a producer can avoid the cost of air pollution control equipment allowing the firm's production to imposes costs (health or environmental degradation) on other parties that are adversely affected by the air pollution. Remember too, it is not just producers that may impose external costs on society. Let's also view how consumers' actions also may have external costs using Field's previous example on driving:

The social costs include all these private costs (fuel, oil, maintenance, insurance, depreciation, and operator's driving time) and also the cost experienced by people other than the operator who are exposed to the congestion and air pollution resulting from the use of the car. The key point is that even if a firm or individual avoids paying for the external costs arising from their actions, the costs to society as a whole (congestion, pollution, environmental cleanup, visual degradation, wildlife impacts, etc.) remain. Those external costs must be included in the social costs to ensure that society operates at a socially efficient rate of output.

Revenue Concept

Revenue refers to the amount received by a firm from the sale of a given quantity of a commodity in the market.
Revenue is a very important concept in economic analysis. It is directly influenced by sales level, i.e., as sales increases, revenue also increases.
The concept of revenue consists of three important terms; Total Revenue, Average Revenue and Marginal Revenue



Total Revenue (TR):

Total Revenue refers to total receipts from the sale of a given quantity of a commodity. It is the total income of a firm. Total revenue is obtained by multiplying the quantity of the commodity sold with the price of the commodity.

Total Revenue = Quantity × Price

For example, if a firm sells 10 chairs at a price of Rs. 160 per chair, then the total revenue will be: 10 Chairs × Rs. 160 = Rs 1,600

Average Revenue (AR):

Average revenue refers to revenue per unit of output sold. It is obtained by dividing the total revenue by the number of units sold.

Average Revenue = Total Revenue/Quantity

For example, if total revenue from the sale of 10 chairs @ Rs. 160 per chair is Rs. 1,600, then:

Average Revenue = Total Revenue/Quantity = 1,600/10 = Rs 160

AR and Price are the Same:

AR is equal to per unit sale receipts and price is always per unit. Since sellers receive revenue according to price, price and AR are one and the same thing.

This can be explained as under:

TR = Quantity × Price … (1)

AR = TR/Quantity …… (2)

Putting the value of TR from equation (1) in equation (2), we get

AR = Quantity × Price / Quantity

AR = Price

AR Curve and Demand Curve are the same:

A buyer's demand curve graphically represents the quantities demanded by a buyer at various prices. In other words, it shows the various levels of average revenue at which different quantities of the good are sold by the seller. Therefore, in economics, it is customary to refer AR curve as the Demand Curve of a firm.

Marginal Revenue (MR):

Marginal revenue is the additional revenue generated from the sale of an additional unit of output. It is the change in TR from sale of one more unit of a commodity.

MRn = TRn-TRn-1

Where:

MRn = Marginal revenue of nth unit;

TRn = Total revenue from n units;

TR n-1 = Total revenue from (n – 1) units; n = number of units sold For example, if the total revenue realised from sale of 10 chairs is Rs. 1,600 and that from sale of 11 chairs is Rs. 1,780, then MR of the 11th chair will be:

MR11 = TR11 – TR10

MR11 = Rs. 1,780 – Rs. 1,600 = Rs. 180

One More way to Calculate MR:

We know, MR is the change in TR when one more unit is sold. However, when change in units sold is more than one, then MR can also be calculated as:

MR = Change in Total Revenue/ Change in number of units = ΔTR/ΔQ

Let us understand this with the help of an example: If the total revenue realised from sale of 10 chairs is Rs. 1,600 and that from sale of 14 chairs is Rs. 2,200, then the marginal revenue will be:

MR = TR of 14 chairs – TR of 10 chairs / 14 chairs -10 chairs = 600/4 = Rs. 150

TR is summation of MR:

Total Revenue can also be calculated as the sum of marginal revenues of all the units sold.

It means, TRn = MR1 + M2 + MR3 + …….MRn

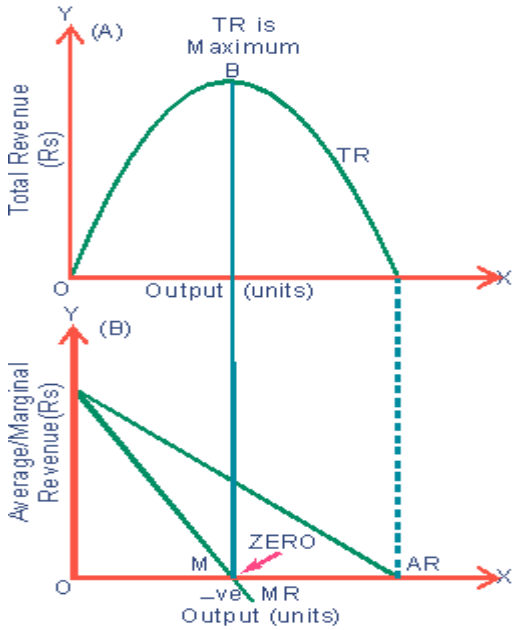
or, TR = ∑MR

The concepts of TR, AR and MR can be better explained through Table 7.1.

Table 7.1: TR, AR and MR:

Units Sold (Q)	Price (Rs.) (P)	Total Revenue (Rs.) TR = Q x P	Average Revenue (Rs.) AR = TR+Q = P	Marginal Revenue (Rs.) MRn=TRn-TRn-1
1	10	10=1×10	10 =10 + 1	10 =10-0
2	9	18 =2×9	9 =18 + 2	8 =18-10
3	8	24 =3×8	8 =24 + 3	6 =24-18
4	7	28 = 4×7	7 =28 + 4	4 =28-24
5	6	30 = 5×6	6 =30 + 5	2 =30-28
6	5	30 = 6 x 5	5 =30 + 6	0 =30-30
7	4	28 = 7×4	4 =28 + 7	TRUE

Relation Between of TR, AR & MR



BUSINESS COMMUNICATION (107)

Unit I

PROJECT AND REPORT WRITING

MEANING OF PROJECT

Project means a "Proposed Plan of Action". It is a planned set of interrelated tasks to be executed over a fixed period and within certain cost and other limitations. It is a sequence of tasks which is planned from the beginning to the end and also it is restricted by time, required results & resources. There has to be a definite deadline, budget & outcomes.

BASICS OF PROJECT WRITING

HOW TO WRITE WELL

1. Precision

There should be exact meaning to the word you intend to say.

2. Vigour

In addition to be precise, you also need to assign some weight & meaning to the words.

3. Spelling and grammar

The spelling & grammar should be such used, which does not embarrass you if done incorrectly.

STRUCTURE OF A REPORT

Format

Use 1.5 line spacing, Font-Times New Roman and Font-Size-12.

Title

Give your document a brief descriptive title.

Introduction

Introduce your topic over here.

Body

The body is the content of your document where you present your data and make your points.

Carefully organize the body of your report so that similar topics are included together, and the logic of your report flows smoothly.

Break up your writing with heading, subheadings, tables, figures, and lists.

Conclusions or Summary

Use a summary or conclusions paragraph to wrap-up your document and provide closure.

It should give a final idea of the whole report.**References**

The reference list is a list of the sources of information used and cited in the document. Cite references to show the source(s) of information and data included in your document. An easy citation format is simply to include the author's last name (or publication name) and year of publication in parentheses.

BASICS OF WRITING A REPORT

1.Identify the audience.

2.Decide on the length of the report in advance.

3.Divide the contents of the report into clearly labeled categories.

Provide an executive summary.

Write an introduction.

Include a methodology section and describe it.

Elaborate on the findings of the project.

Explain preliminary project successes.

Describe project challenges and obstacles.

Suggest recommendations and solutions.

Write the report conclusion.

4.Use formatting techniques & sub-headings to guide the attention of readers.

5.Review the report for errors.

Report Writing:-

A report can be defined as a testimonial or account of some happening. It is purely based on observation and analysis. A report gives an explanation of any circumstance. In today's corporate world, reports play a crucial role. They are a strong base for planning and control in an organization, i.e., reports give information which can be utilized by the management team in an organization for making plans and for solving complex issues in the organization.

A report discusses a particular problem in detail. It brings significant and reliable information to the limelight of top management in an organization. Hence, on the basis of such information, the management can make strong decisions. Reports are required for judging the performances of various departments in an organization.

How to write an effective report

1. Determine the objective of the report, i.e., identify the problem.
2. Collect the required material (facts) for the report.
3. Study and examine the facts gathered.
4. Plan the facts for the report.
5. Prepare an outline for the report, i.e., draft the report.
6. Edit the drafted report.
7. Distribute the draft report to the advisory team and ask for feedback and recommendations.

The essentials of good/effective report writing are as follows-

1. Know your objective, i.e., be focused.
2. Analyze the niche audience, i.e., make an analysis of the target audience, the purpose for which audience requires the report, kind of data audience is looking for in the report, the implications of report reading, etc.
3. Decide the length of report.
4. Disclose correct and true information in a report.
5. Discuss all sides of the problem reasonably and impartially. Include all relevant facts in a report.

6. Concentrate on the report structure and matter. Pre-decide the report writing style. Use vivid structure of sentences.
7. The report should be neatly presented and should be carefully documented.
8. Highlight and recap the main message in a report.
9. Encourage feedback on the report from the critics. The feedback, if negative, might be useful if properly supported with reasons by the critics. The report can be modified based on such feedback.
10. Use graphs, pie-charts, etc to show the numerical data records over years.
11. Decide on the margins on a report. Ideally, the top and the side margins should be the same (minimum 1 inch broad), but the lower/bottom margins can be one and a half times as broad as others.
12. Attempt to generate reader's interest by making appropriate paragraphs, giving bold headings for each paragraph, using bullets wherever required, etc.

PARAGRAPH WRITING

First of all, WHAT IS A PARAGRAPH? Paragraphs comprises of related sentences. The focus is on only "One-Idea".

HOW TO WRITE A PARAGRAPH

The paragraph should be made while keeping the following four-points in view:-

1.Unity

2.Order

3.Coherence

4.Completeness

5.Well developed

PROPOSAL WRITING

What is a Proposal?

It is basically a persuasive offer to complete some work, to sell a product, to provide some service or to provide a solution to a problem. A **business proposal** is a written offer from a seller to a prospective buyer. Business proposals are often a key step in the complex sales process—i.e., whenever a buyer considers more than price in a purchase. A proposal puts the buyer's requirements in a context that favors the sellers products and services, and educates the buyer about the capabilities of the seller in satisfying their needs. A successful proposal results in a sale, where both parties get what they want, a win-win situation.

WRITING A PROPOSAL

Proposal will either be accepted or rejected. Obviously, you want your proposal to be accepted. To help make this possible, follow the six steps listed below.

1.*Your proposal should define the problem and state how you plan to solve the problem.*

2.*Do not assume that your readers will believe your solution is the best.*

3.*Your proposal should be researched thoroughly.*

4.*Your proposal should prove that your solution works.*

5.*Your proposal should be financially feasible.*

6.*Your finished proposal should look attractive.*

PAPER READING (HOW TO READ A RESEARCH PAPER)

1. Read critically
2. Read creatively
3. Make notes as you read the paper
4. After the first read-through, try to summarize the paper in one or two sentences
5. If possible, compare the paper to other works
6. Summarizing the paper

VOICE MODULATION

Voice Modulation is the adjustment of the pitch or tone of voice to become enough to be clearly heard and understood by the audience.

COMPONENTS OF VOICE MODULATION:-

Pace or Speech speed: speed should be such that you are able to understand what is said.

Pitch or Depth of voice: Keep it at a level that is comfortable for you.

Pause: Pauses should be given at required intervals.

Power: One should speak from inside the abdomen to make it commanding by generating intensity in your voice.

Volume: Try and match your listener's speech volume.

Emphasis: Put emphasis by putting some pressure or focus on the key words.

Inflection and pausing effectively**:** Inflection means ups and downs of words. Inflection links meaning

and feeling with your words.

Tone

Rhythm and Melody
Identifying your optimal pitch

BASICS OF PROJECT PRESENTATION

WHAT IS PRESENTATION?

When we talk about presentation, we mean that there is a person or group of persons who will showcase his/her work before an audience. Now, when there is Project presentation, then the person who has made the project will give a brief summary including the following things:-

1.Introduction about the Topic.

2.Objective of the Study done by the person.

3.Research methodology used in the Project.

4.Conclusion

5.Limitations

6.Suggestions

7.References of the sources used for making the project.

Unit II

How to make Presentations

- Be neat and avoid trying to cram too much into one slide.
- Be brief use keywords rather than long sentences
- Have a very clear introduction, to motivate what you do and to present the problem you want to solve. The introduction is **not technical** in nature, but strategic (i.e. why this problem, big idea).
- Use only **one idea per slide**. Have a good conclusions slide: put there the main ideas, the ones you really want people to remember. Use **only one "conclusions" slide**.
- The conclusion slide should be the last one. Do not put other slides after conclusions, as this will weaken their impact.

- Don't count on the audience to remember any detail from one slide to another (like color-coding, applications you measure, etc.). If you need it remembered, re-state the information a second time.
- Try to cut out as much as possible; less is better.
- Use a good presentation-building tool, like MS PowerPoint.
- Humor is very useful; prepare a couple of puns and jokes beforehand (but not epic jokes, which require complicated setup). However, if you're not good with jokes, better avoid them altogether. Improvising humor is very dangerous.
- The more you rehearse the talk, the better it will be. A rehearsal is most useful when carried out loud. 5 rehearsals is a minimum for an important presentation.
- Not everything has to be written down; speech can and should complement the information on the slides.
- Be enthusiastic.
- Give people time to think about the important facts by slowing down, or even stopping for a moment.

Text

- Slides should have short titles. A long title shows something is wrong.
- Use uniform capitalization rules.
- All the text on one slide should have the same structure (e.g. complete phrases, idea only, etc.).
- Put very little text on a slide; avoid text completely if you can. Put no more than one idea per slide (i.e. all bullets should refer to the same thing). If you have lots of text, people will read it faster than you talk, and will not pay attention to what you say.
- Use very few formulas (one per presentation). The same goes for program code (**at most one code fragment** per presentation).
- Do not put useless graphics on each slide: logos, grids, affiliations, etc.
- Spell-check. A spelling mistake is an attention magnet.

Illustrations

- Use suggestive graphical illustrations as much as possible. **Prefer an image to text**.

Do not "waste" information by using unnecessary colors. Each different color should signify something different, and something important. Color-code your information if you can, but don't use too many

different colors. Have high-contrast colors.

 A **few** real photos related to your subject look very cool (e.g. real system, hardware, screen-shots, automatically generated figures, etc.). Real photos are much more effective during the core of the talk than during the intro.

Sometimes a matte pastel background looks much better than a white one.

Use strong colors for important stuff, pastel colors for the unimportant.

Encode information cleverly: e.g. make arrow widths showing flows proportional to the flow capacity.

VARIOUS PRESENTATION TOOLS

To make your presentations entertaining and at the same time educational you should consider the best presentation tools below.

1. Slide Rocket

It is an online presentation which allows you to engage with people and be able to deliver results. It helps you to come up with a presentation that will wow your audience. It gives you the power to the internet and you can also integrate with the public from free web resources like the You Tube or flicker. This online software allows you to create and share your work publically or privately.

2. Presentation

It is like a community where you can create and show your presentation. You can work alone or with others while it allows you to make it private or public. With Prezentit your works are always available, anytime and anywhere for viewing or edit. It is an online software and it is based on the JavaScript allowing real time collaboration.

3. Author Stream

It enables presenters to share PowerPoint either publically or privately. It is the best tool for marketing purposes and it is also an easy process to make videos from online PowerPoint presentations. This app is all about viewing and sharing PowerPoint presentations either with friends, family, or the public.

4. Empressr

It is the best original app with based rich media. And now you can share information the way you prefer and it allows you to make it public or private. It is built with tools which record either videos or audio which is added to the slides.

5. Google Docs

It allows the users to access your documents anytime and anywhere easily. It is a web-based office suite which is offered by Google within its Google drive services. The user is allowed to collaborate with coworkers in real time on different aspects including spreadsheets, documents, presentation and many others.

6. Casmo

This is the best solution for the multimedia presentations for videos and photos. It is the easy and yet very powerful platform for your work. It works and supports playback for the computer browser, mobile phone, and iPad. It allows you to upload PDF, MP3, images and many more. You can download presentation as videos or even auto-upload to YouTube.

7. Zoho

It is online software which manage your sales, markets your products and offer customer support. Therefore it allows the user to focus on the business and leave the rest to the app. It has a wide function for storing and sharing of information which also allows you to collaborate with others.

Guidelines for Effective Presentations

We need to make presentations to a wide variety of audiences, for example, Board members, employees, community leaders and groups of customers. Usually there is a lot that can be quickly gained or quickly lost from a presentation.

1. **Background**: The purpose of a presentation is communication. Poorly prepared displays (slides or overhead transparencies) and poor delivery plague many technical sessions at statistical meetings. The speaker often speaks too quickly or too quietly, or uses displays that cannot be read clearly.

2. **Content organization**: Your presentation will be most effective when the audience walks away understanding the five things any listener to a presentation really cares about:

•What is the problem and why is it a problem?

•What has been done about it before?

•What is the presenter doing (or has done) about it?

•What additional value does the presenter's approach provide?

•Where do we go from here?

3.**Planning**: Who is your audience? Be really clear about who your audience is and about why is it important for them to be in the meeting. Members of your audience will want to know right away why they were the ones chosen to be in your presentation. Be sure that your presentation makes this clear to them right away. What do you want to accomplish? List and prioritize the top three goals that you want to accomplish with your audience. Inform? Persuade? Be clear about the tone that you want to set for your presentation, for example, hopefulness, celebration, warning, teamwork, etc. Consciously identifying the tone to yourself can help you cultivate that mood to your audience.

4.**Level of audience and knowledge** - List the major points of information that you want to convey to your audience. When you are done making that list, then ask yourself, if everyone in the audience understands all of those points, then will I have achieved the goal that I set for this meeting? What medium will you use for your
presentation?

5. **Design a brief opening** (about 5-10% of your total time presentation time) that:

a.Presents your goals for the presentation.

b.Clarifies the benefits of the presentation to the audience.

c.Explains the overall layout of your presentation.

d.Prepare the body of your presentation (about 70-80% of your presentation time).

e.Design a brief closing (about 5-10% of your presentation time) that summarizes the key points from your presentation.

f.Design time for questions and answers (about 10% of the time of your presentation).

6.**Organizing your presentation**: Beginning - middle - end . Time allocation Begin with an overview Build up your middle and emphasize your points End quickly with a summary

7.**Supporting your presentation Hard copy of your presentation** - slides/overheads Notes to support your presentation if you provide the supplemental information during your presentation, then your audience will very likely read that information during your presentation, rather than listening to you. Therefore, hand out this information after you have completed your presentation. Or, hand it out at the beginning of your presentation and ask them not to read it until you have completed your presentation.

8.**Don't crowd presentation with detail Bullets** - short, five to six words per line Five or six lines per overhead/slide Colors Brightest colors jump forward - text Dark colors for background Consistent color scheme throughout to link ideas together

9.Typefaces (fonts) Simple styles one or two styles per slide Retain styles throughout Style variations - italics, bold, shadow, color Layout Consistent Balance

10.Emphasis Reveal information one idea at a time - buildups Use transitions appropriately DON'T read yourinformation-- use the words in your own presentation Charts Accurate Easy to interpret Have impact

11.**Basic Guidelines about Your Delivery**

If you are speaking to a small group (for example, 2-15 people), then try to accomplish eye contact with each person for a few seconds throughout your delivery.

Look up from your materials, or notes, every 5-10 seconds, to look into the audience.

Speak a little bit louder and a little bit slower than you normally would do with a friend. A good way to practice these guidelines is to speak along with a news anchor when you are watching television.

Vary the volume and rate of your speech. A monotone voice is absolutely toxic to keeping the attention of an audience.

Stand with your feet at shoulder-length apart.

Keep your hands relatively still.

Boredom factors during Presentation

A flat or monotone voice.

A static presentation of facts and figures without real-life examples.

Over-use of words such as: like, um, uh, ok, you know.

Not giving the audience a chance to warm up to the speaker. A speaker can avoid this by making a joke or telling a

Funny story to break the ice.

No enthusiasm for the subject matter.

Lack of facial expression.

Being unprepared or unorganized.

Too many people in a small room which will make the room too warm and uncomfortable.

Room temperature that is too warm or too cold.

Lack of handouts or informational literature.

How to overcome boredom factors during Presentation

Do your homework. Remember that failing to plan is planning to fail. So, commit the time and effort to properly

prepare your audience-centric presentation.

Part of your audience analysis process is *anticipating their needs, reactions and potential questions.* Be prepared to deal with their reactions and respond to their questions with succinct and focused answers … just in case.

Also accept the fundamental difference between *being an expert and having expertise.* You don't need to be an expert, just have more expertise on the topic than the audience does so you can accomplish your outcomes. An old Sicilian proverb comes to mind here – 'In the land of the blind, the one-eyed man is king.'

Rehearse your presentation several times, out loud, standing up, working with your slides. Audio or video tape it for self-critique. For really important presentations, rehearse with a small audience of colleagues who can relate to the topic and provide focused, objective constructive feedback.

INTERACTIVE PRESENTATION

Interactive presentation is a dynamically different way of using PowerPoint that gives presenters fast access to individual ideas while speaking. Rather than merely scrolling through slides, you'll make choices along the way. It provides a **jumping-off point** to more than 200 hours worth of visual explanations and examples allowing a presenter efficient, easy access to his or her **entire collection of materials at any point in his presentation**. Whether the presenter thinks of a relevant example on the

spot or decides to reference material in response to a question, he or she can do it seamlessly in a way that standard linear, bullet point presentations simply do not allow.

In order to give an effective presentation, there are a few key steps to take. This goes for a student giving a class presentation or a professional giving a business presentation. Keeping these elements in mind, a successful presentation will be given.

1.**Know your topic inside and out.** By the time you get up in front of your audience, you must be comfortable talking about the topic and be able to answer any questions that may come your way. It is not a bad thing to have note cards or an outline in front of you while presenting.

2.**Know to whom you are presenting.** Learn what intrigues the audience and use that to your advantage.

3.**Know your limits.** Just because you think you are humorous doesn't mean the audience thinks you're humorous. Present in a way that you are most comfortable with, while still keeping it professional.

4.**Know the purpose** of the presentation. What exactly is it that you are trying to do? Sell? Educate? Entertain? Keep this in mind while preparing.

5.**Use proper visuals.** Handouts are an effective visual. Audience members can take notes and follow along. PowerPoints and videos also work effectively. People tend to remember visuals better than text. When using PowerPoint, Prezi, or other slideshow programs, keep it professional looking yet intriguing. Use your own design elements and themes. Be creative.

6.**PRACTICE!** You may feel comfortable after just reading through your presentation, but that does not necessarily mean you are comfortable speaking it to an audience. So, practice the presentation out loud in front of mirror multiple times.

7.**Allow time for Q&A** at the end of your presentation. This is the time when your audience can ask for clarification or provide their input on certain elements within the topic.

Presentation as part of a job interview

Delivered well, with the desired impact, a presentation can certainly enhance your chances of success. However, for many it is an obstacle that can have the opposite effect – due to nerves, lack of preparation and focus. So it's veryimportant to do the right sort of preparation to ensure that you get it right on the day. There are different types of presentations that you can be asked to deliver at an interview. You may be asked to prepare a presentation on a certain topic or on a topic of your choice

Planning the Presentation

If asked to prepare a presentation, careful planning beforehand will help you to deliver it with greater confidence and success as does preparing for an interview in all other situations too. Do your research on the company to get a good understanding for the corporate style and culture of the company. This will help you to tailor your presentation to the needs of your interviewer(s). Check out the company website for information. You may also be able to use the site's search facility to discover more about the person or people who will be interviewing you.

Structuring your message

Decide on one main key message that you want to get across. This is like the spinal cord of the presentation – it helps hold the presentation together. It also provides a strong motivation for your audience to listen to you. Your presentation should follow a clear structure – with a strong opening, main body and ending - as this will help you stay focused and avoid losing track of your thoughts if you are nervous.

Your opening should capture attention at the start. It should clearly communicate your key message to your audience. Keep it succinct and punchy, using short sentences. A long rambling opening gives the impression that it is going to be a long rambling presentation. Structure the main body of your presentation to three main sections. Three is a powerful number that people tend to remember things in. By restricting your presentation to three main sections it will keep astrong focus. You can then have sub- sections within each of the three main sections if you need to expand on your points. You ending should also be memorable. Use the opportunity to re-emphasise your key message and leave a lasting impression.

The impromptu Presentation

You may be put on the spot and asked to give a presentation without prior warning. For these situations you need some form of standard structures in your head that you can call upon at very short notice.

Power of THREE

Using the Power of Three is a helpful tool as well here. Use three key words/phrases to help you create a quick structure in your head. One example structure with three areas that you can use quickly if asked

to present on a problem solving or strategic issue is:

1.What was the issue?

2.What did you do to resolve it?

3.What was the outcome?

Chronological structures

Another structure you can use for impromptu presentations is:-

1.Past

2.Present

3.Future

This is a useful structure for the "Tell me about yourself" presentation (or question) that is commonly asked at interview by describing your personal history under these three titles.

The STAR structure

Another similar structure to consider is S.T.A.R. This has four steps to it.
Situation - describe the context / background
Task - what was your responsibility?
Action - what did you do?
Result - what were the results of your actions?

The STAR structure is often used to help formulate responses to competency based interview questions - but can also be used to help provide you with a higher level structure for a slightly longer impromptu presentation.

Delivering with impact

Nerves can take over and hinder your performance. Also – when you are nervous you are more likely to rush and this will make you feel even more nervous. To help control your nerves, take two deep

breaths before you start, breathing out for as long as possible to help release tension and encourage you to slow down when you start to speak.

Art of Listening

Meaning of Listening

Listening is considered to be the one of the most important part of the oral communication. The term is used in order to make oral communication effective. Poor listening skills of an individual may affect the individual very badly specially in an organization where the maximum number of time a person spent in communication therefore it is very much important if will talk from organizational prospective because a effective and active listening by an individual plays a very important role in contributing towards the success of the business.

Difference between listening and hearing

Hearing is one of the five senses of a person and it is the ability to perceive sound by detecting vibrations through an organ such as the ear. According to Merriam-Webster, hearing is "the process, function, or power of perceiving sound;specifically: the special sense by which noises and tones are received as stimuli." In hearing, vibrations are detected by the ear and then converted into nerve impulses and sent to the brain. A person who is unable to hear has a condition known as deafness. Hearing occurs even in sleep, where the ear processes the sounds and passes them on to the brain, but the brain does not always react to the sound. Listening also known as 'active listening' is a technique used in communication which requires a person to pay attention to the speaker and provide feedback. Listening is a step further than hearing, where after the brain receives the nerve impulses and deciphers it, it then sends feedback. Listening requires concentration, deriving meaning from the sound that is heard and reacting to it.

The listening process

1.Sensing or Selection

2.Interpretation

3.Evaluation

4.Response

5.Memory

Types of Listening

1.**Passive Listening**: It involves Physical presence but mental absence of the listener. The listener is merely hearing out not absorbing the message.

.**Marginal Listening**: In marginal listening small pieces of the message are listened to and assimilated. He allows information to sink only in bits and pieces.

3.**Sensitive Listening**: Listener tries to understand the viewpoint of the speaker. If taken in isolation, sensitive listening results in onesided sympathetic stand.

4.**Active Listening**: The listener absorbs all that is being said and moves in accordance with the intent of the speaker. The listener asks questions to understand the viewpoint of the speaker.

UNIT – III

The deal is **nobody gets a job unless they first have a job interview**. That's pretty obvious, right? So how do you get a job interview? There are a few ways, but the focus for today will be getting out the old resume and preparing to be interview bait. Some sticking points to remember are that everybody else applying for the job has a resume also.

Keep in mind that any resume should be:

1.**Visual**

2.**Relevant**

3.**Concise**

4.**Exciting**

5.**Truthful**

Visual Impact

Take any standard resume that you could produce using the Resume Wizard in Microsoft Word. My resume is shown here (with some information changed for privacy concerns). Comparing these two side-by-side, I think most people would agree that mine looks most visually distinct. Later, we'll look at some of the really simple tools available in Microsoft Word for making print media look really cool.

Relevant

Nothing says low-class as much as an impersonal email or resume. I take that back, a misaddressed or irrelevant message is lower than that. So put forth a little bit of effort. Personalize the information. If you're applying for a highschool social studies position, then your mad finger-painting skills may not be the most impressive thing to the principal. By the same token, your experience working at Burger King ten years ago is not as impressive as your babysitting service twenty years ago. This is the reason that I wrote about some things you can do while still in school that will make getting a job that much easier.

Concise

Deleting extraneous information makes the powerful stuff that much more powerful. There is nothing that says resumes have to be limited to one page in today's world. However, I have consciously trimmed mine to one page simply to make it more powerful. We'll go into some of the tricks I use tomorrow, but *Selected Work Experience* seems more impressive to me than *Teaching Experience*. Be careful that you don't leave off important information. Do not be so zealous to trim to one page that you create a gap of 3 years here and 2 years there. That looks like you are inconsistent and, while it could be answered by a simple phone call from the interviewer, it could also be answered by a second page. Save trees, but also save time for those who are weeding through applicants.

Exciting

Market yourself. **Tell them a story** that they want to hear. Show them the benefits of hiring you. If you can convey who you are and what it is that you are looking for in your life, then they are more inclined to consider you and give you the interview. Remember, everybody else applying for the job has a resume. But most of them won't tell the interviewer a story about why they should meet. You will, right?

Truthful

In telling your story, you have to be truthful. Don't make stuff up just because you think it's what they want to hear. Start with where you are. Find a way to make that relevant and helpful to the betterment of the school environment. Exaggeration will merely bite you in the end. Thursday, we'll look at how to make a visually effective resume that jumps off the page and into the good graces of the interviewer. I know you won't want to miss that. Selling yourself to an employer is your first challenge, and your resume will be your sales pitch. Sales resumes need to be results-oriented,emphasizing how you will contribute to your employer's bottom line. Start by creating a profile or career summary that highlights your relevant skills and value to potential employers. Include the main reasons an employer should call you for an interview, and clearly show your areas of expertise and industry knowledge. For example, if you are pursuing a pharmaceutical sales representative position, those keywords and your supporting knowledge should be in the profile. This section is perfect for exhibiting the drive, energy and enthusiasm that is so important in the sales profession.

Document Your Achievements

A need to continually achieve is key to sales success. Prove you are an achiever. Document your three biggest victories, and be prepared to reel off a list of at least seven other significant wins in your life from school, sports, music, class politics, etc. You will achieve again for the employer, because past behavior is the best predictor of future behavior. You may not have sales success, but you have had success in other areas. Success leaves clues.

It's deceptively easy to make mistakes on your resume and exceptionally difficult to repair the damage once an employer gets it. So prevention is critical, especially if you've never written one before. Here are the most common pitfalls and how you can avoid them.

Avoid Common Resume Mistakes

1. Typos and Grammatical Errors

Your resume needs to be grammatically perfect. If it isn't, employers will read between the lines and draw not-so-flattering conclusions about you, like: "This person can't write," or "This person obviously doesn't care."

2. Lack of Specifics

Employers need to understand what you've done and accomplished. For example:

A.Worked with employees in a restaurant setting.

B.Recruited, hired, trained and supervised more than 20 employees in a restaurant with $2 million in annual sales.

Both of these phrases could describe the same person, but details and specifics in example B will more likely grab an employer's attention.

3. Attempting One Size Fits All

Whenever you try to develop a one-size-fits-all resume to send to all employers, you almost always end up with something employers will toss in the recycle bin. Employers want you to write a resume specifically for them. They expect you to clearly show how and why you fit the position in a specific organization.

4. Highlighting Duties Instead of Accomplishments

It's easy to slip into a mode where you simply start listing job duties on your resume. For example:

•Attended group meetings and recorded minutes.

•Worked with children in a day-care setting.

•Updated departmental files.

Employers, however, don't care so much about what you've done as what you've accomplished in your various activities. They're looking for statements more like these:

•Used laptop computer to record weekly meeting minutes and compiled them in a Microsoft Word-based file for future organizational reference.

•Developed three daily activities for preschool-age children and prepared them for a 10-minute holiday program performance.

5. Going on Too Long or Cutting Things Too Short

Despite what you may read or hear, there are no real rules governing the length of your resume. Why? Because human beings, who have different preferences and expectations where resumes are concerned, will be reading it. That doesn't mean you should start sending out five-page resumes, of course. Generally speaking, you usually need to limit yourselfto a maximum of two pages. But don't feel you have to use two pages if one will do. Conversely, don't cut the meat out of your resume simply to make it conform to an arbitrary one-page standard.

6. A Bad Objective

Employers do read your resume's objective statement, but too often they plow through vague pufferies like, "Seeking a challenging position that offers professional growth." Give employers something specific and, more importantly, something that focuses on their needs as well as your own. Example: "A challenging entry-level marketing position that allows me to contribute my skills and experience in fund-raising for nonprofits."

7. No Action Verbs

Avoid using phrases like "responsible for." Instead, use action verbs: "Resolved user questions as part of an IT help desk serving 4,000 students and staff."

8. Leaving Off Important Information

You may be tempted, for example, to eliminate mention of the jobs you've taken to earn extra money for school. Typically, however, the soft skills you've gained from these experiences (e.g., work ethic, time management) are more important to employers than you might think.

9. Visually Too Busy

If your resume is wall-to-wall text featuring five different fonts, it will most likely give the employer a headache. So show your resume to several other people before sending it out. Do they find it visually

attractive? If what you have is hard on the eyes, revise.

10. Incorrect Contact Information

I once worked with a student whose resume seemed incredibly strong, but he wasn't getting any bites from employers. So one day, I jokingly asked him if the phone number he'd listed on his resume was correct. It wasn't.

Guidelines for a good resume

Here are five rules to help you write a resume that does its job:

1. **Summarize Your Unique Value**
2. **Communicate with Confidence**
3. **Watch Your Language**
4. **Key in on Keywords**
5. **Keep it Concise**

What do these really mean?

1. **Summarize Your Unique Value**

A resume should begin with a **Summary** (or4if you're a student, new grad, or career changer, an **Objective**). Use this space to tell employers who you are and how your skills and qualifications meet their needs. Although your real objective may be to get away from your micro-managing boss or shorten your commute, *don't say that on your resume!*

Your Summary or Objective is where you explain how and why you are uniquely qualified to contribute to the company.
Bonus: *Once you've crafted a solid message that summarizes your value, you can use it as the basis for your response to every hiring manager's favorite line: "Tell me about yourself."*

2. **Communicate with Confidence** Tell the potential employer what you've accomplished in your current and

previous roles to show how you made a difference. This is not the time to be humble or modest, or to assume the employer will read between the lines. For instance, if your resume just states the facts, without context (e.g., "Sold 50,000 widgets between January and June"), the reader won't know if that's better, worse, or the same as what the company had achieved in the past. But a confident statement like "Boosted widget sales 35% in the first six months" or "Increased widget sales from 40K to 50K within six months" is bound to jump off the page.

3. **Watch Your Language** Don't start your sentences with **I** or **We** or **Our**. In fact, **don't even use full sentences**.

4. **Key in on Keywords** Here's an awful truth: Resumes, in many cases, are not even read. Rather, they're scanned (either by a machine or by someone who is not the hiring manager). What they're scanning for is keywords or phrases that match their hiring criteria.

Not sure what keywords to put in your resume? Read the job description for a position that interests you, as well as descriptions for similar jobs. Then read your target companies' web sites.

HOW TO FACE AN INTERVIEW BOARD

New job opportunities are arising fast in every part of the world. Anyone can see mushrooming call-centers and branch offices of multinationals. Everyday new institutes are opening to prepare aspiring young men and women for lucrative jobs in public and private sector. Interview for an anticipated post has become a very important step in the professional life of a young person. Despite trying their best for this moment things go wrong for most of the candidates.

BASIC PREPARATION

Don’t bang your head with an interview board like an enthusiastic teenager (they have a passion for driving fast bikes mindlessly and get bruises). Keep your mind cool and prepare well. Refresh your general knowledge, rehearse answering the expected questions (in front of a mirror now and then). Arrange your certificates properly in an attractive folder. Avoid taking irrelevant documents. You generally need: copies of your educational and experience certificates,bio-data, and application (sent to the company). Be sure you fulfill the requirements mentioned in the advertisements of the company otherwise you may become a laughing stock as soon as your folder is examined. Never push your folder for the perusal of the board until it is demanded. Don’t forget to pray to God for success before leaving for aninterview. It will definitely boost your confidence. Take light breakfast/meals as it will keep your mind light and you will feel less nervous. A heavy stomach can cloud your mind, leading to

nervousness.

BE WELL DRESSED

Wear a jacket, ride your bike, and appear before the board, like your favourite hero but you end up becoming a villain. Although this may be the right step for many to attract the attention of some people but you need a formal dress to woo the board. You must feel comfortable and confident in your dress. It should be clean and well ironed. Avoid gaudy orbright-coloured suits. You have to wear a moderate dress according to the occasion. Polish your shoes, have a hair cut, if needed.

CONTROLLING NERVOUSNESS

Nervousness is natural. Even the best of the orators, businessmen or politicians used to get nervous. So there is nothing extraordinary about your nervousness. Moreover, you can control it easily. In fact, nervousness is a form of stored mental energy. The best solution is to use it positively:

1.Concentrate in preparing,

2.Shine your personality (good dress, shoes, haircut etc.) ,

3.Eat light food,

4.Pray to god,

SPEAK WELL

A candidate must have command over language, pronounce the words clearly and have a good store of vocabulary. Hissentence-making should be grammatically correct. Answers should be in brief and to the point. Lack of fluency, bad grammar, incorrect pronunciation or answering in a hurry without listening to the board properly can surely land you in trouble. Such candidates never get good posts in big companies. Join a good institute to improve your sentence-making,pronunciation and fluency.

EXPECTED QUESTIONS

Interview is basically a series of questions asked from the interviewee to test his ability, wisdom and personality.{Interview-boards of many big companies also have an expert who can understand human psychology, and who is capable enough to read the mind of a candidate by studying his body

language). We can divide the expected question in three categories: 1. Questions relating to personal information of a person (family background, interests, education, experience etc.); 2. Questions relating to his knowledge about the work he will be responsible for in the company; 3. Questions to check the personality of a person – his nature, ideology, decision-making & problem-solving ability etc. Companies may have different set of questions according to their work culture. However most of the questions are related to the categories of the questions given above. Some irrational questions are also asked by some interview boards. Don't panic in such a situation. Maintain your self-confidence and answer in a simple and straightforward way. Interview board may be checking your psychological structure. If you get irritated or try to be over smart you will definitely be discarded from the list of expected winners.

DON'T BE CLEVER

Many candidates try to act cleverly to show their intelligence but it always misfires. Remember that every company needs sincere and hard-working employees. Clever cats are kept at a distance. Listen to the board members carefully. Whenever a question is asked from you answer in brief. If you don't understand a question request the board politely to repeat it. Talk like you are obeying your seniors, giving them all the respect. Speak confidently and clearly. Your voice must be loud enough so that the board may hear and understand it easily. Don't give any unnecessary information or you may become a big bore for the board. In case, you are unable to think answer of a question, just say sorry. Avoid repeating the same sentence or phrase. Never contradict the board even if you have a vast knowledge of the subject. Don't criticize any other community, company or person while giving your answers. Control your emotions. Imposing or an egoist personality is never liked by a board. Humility and politeness are your winning edges. At the end of the interview don't forget to say the board 'thanking you very much'. Before leaving move a few steps backward respectfully and come out.

IMPROVE BODY-LANGUAGE

The importance of body language is yet to be recognized fully. Sometimes body language of a candidate even proves weightier than his/her ability. It will solve this puzzle of your mind: why do some candidates are selected although they are less capable than others in every way? If your body language is negative it will create an artificial distance between you and the interview board. The board

will be confused and unable to judge your abilities. A good body language carries your confidence to the board, assuring and convincing them about your ability. They think you will learn fasteven if you are less capable at the time. Your good dress, smile, confidence and good manners convey a language, which affect the interview greatly. Don't sit on the chair like a hard rock. Sit easily, ready to face the bombardment of questions. If you panic at the first salvo you will lose the game. Instead, feel relaxed and think that you are here to gain experience and learn.

PROPER BODY POSTURE

Interview skills and communication skills are not just about **speech techniques and structures**. You may have come across studies or statistics which state that up to 60% of the impression that you make is through your body language. Whatever the reality behind this statement, it is undoubtable that the way you dress and behave at an interview will strongly influence the person who is looking at you, even if it is subconscious.

To make a strong impression, there are a number of rules regarding correct body language that you need to reflect upon and adopt:

Choose a good position within the room

At an interview, you will normally be directed to a specific seat (i.e. you will have no choice). However, interviews can often be conducted in oversized environments (e.g. a meeting room with a table for 8 when there are only 3 of you). Make sure you choose a seat which enables you to see everyone involved without having to rotate your head exaggatedly. In most cases, it may be best to hover around to see which chairs the interviewers are aiming for before making your selection. If there is a window, choose a chair that faces it so that your face is lit from the front, unless there is good lighting all round. If you turn your back to the window, the interviewers may see you in sepia!

Maintain a good posture

If you are being interviewed at a table, make sure that you are not too close to the table. As a rule of thumb, your body language should be such that if you let your arms fall loosely on the table in front of you, they should fall with your elbows slightly outside of the table. If you elbows are actually on the

table then you are too close. If your elbows are more than a few inches away (or you have to lean forward a lot to put your hands on the table) then you are too far. For most people, the ideal distance between chest and table is about 4 inches. Plant both feet onto the ground so that you remain stable; and put your hands on the table (people who place their hands below the table come across as having something to hide). Keep yourself upright, with a slight slant forward and relax our shoulders. Slouching is bad body language! If there is no table (or only a low table) then simply rest your hands on your lap.

Don't be afraid to "own the space"

Just because your are under observation, it does not mean that you should recoil in a corner. It is okay to stand or sit with your legs slightly apart, and in fact, it is a sign of confident body language (don't overdo it though, it would become indecent!)

Limit you hand and arm movement

It is perfectly okay in your body language to move your arms and hands around, and if that is the way that you normally behave then don't try to become someone else. Your personality and enthusiasm are as important as everything else. However make sure that such movements do not become distracting and do not take the focus away from your face. To achieve this, make sure that your movements are limited to the corridor in front of you, never higher than your chest, and never under the table. If there is no table, you can let your hands go as far down as your lap.

If your hands go outside towards the left or right, your interviewers will follow them and may stop concentrating on you. If your hands go over chest level, you will most likely obscure your lips or eyes. If you have a tendency to fidget in a very distracting manner, intertwine your fingers and rest your hands on the table. Whatever you do, never cross your arms. It will make you look unreceptive, guarded and lacking in confidence.

Smile

A nervous smile is better than no smile at all. No one wants to recruit a grumpy person or someone who looks like they are not enjoying themselves. Good interviewers will understand that you may be nervous and will make attempts to put you at your ease. Make sure you reward their efforts with an easy smile. No need to overdo it. It is not a contest for straight teeth, but simply a reasonable attempt to engage with them. Smile lightly also when you are being introduced to each member of your panel. With this body language you can build a good rapport. It is also perfectly acceptable to laugh if the situation warrants it (but avoid making jokes just for the sake of introducing a laugh into the

conversation. You'll probably end up being the only one laughing, and you'll soon be crying.)

Maintain eye contact

If you do not make eye contact, you will come across as evasive and insecure which is poor body language. If you stare at people too much, you will make *them* insecure. There are two situations here: either you are being interviewed by just one person, in which case you will have no choice but to look at them all the time; or you are being interviewed by more than one person. If this case, then look mostly at the person who is asking you the question, and occasionally glance aside to involve the others (they will be grateful that you are trying to involve them into the conversation even if they have not asked that particular question).

Beware of the props

If you have a pen with you, avoid fiddling with it. It will only end up flying in the wrong direction. Similarly, if they offer you a drink (tea, coffee, water, etc), make sure that you can cope with it and that won't need to go to the loo or start crossing your legs half-way through the interview. Generally you should avoid picking up any drink if you can. Other than the fact that it may end up down your shirt or on your lap, the movement of the water in a glass that you have just picked up will reveal just how nervous you are.

Mirror the interviewer's behaviour

Mirroring (i.e. acting similarly) to someone is an indication that there is a connection through body language. It should happen normally but you may be able to influence it too, if only to give the interviewer the feeling that you are getting on. For example, if the interviewer is sitting back then you may want to sit back a little too; if he leans forward, you may lean forward to. Be careful not to overdo it though and do not mirror instantly, otherwise it will look like some kind of Laurel and Hardy sketch.

And relax ...

At the end of the day, you can't spend all your energy focussing on body language. There is no point having a **brilliant body language** if you are talking rubbish. Bearing in mind that **body language is a reflection of your level of confidence**, it is important that you build your confidence up first through good preparation and then go to the interview relaxed. You will be surprised of how much of the above you can do naturally.

IMPORTANCE OF GESTURE

In a job interview, it's likely that your body language will have more of a positive impact on your success than anything you say. Consider the following scenarios: As you're waiting to be called in for a job interview, do you patiently check emails on your phone, or do you nervously practice answers to tough questions? When introduced to your interviewer, do you make strong eye contact and offer a firm handshake? And as the meeting begins, do you speak passionately and expressively, or are your responses rehearsed and carefully controlled?

In each of these examples, your body language is giving off important signals about what kind of employee you would be. In fact, studies indicate that body language accounts for a full 55% of any response, while what you actually *say*accounts for just 7%. The remaining 38% is taken up by "paralanguage," or the intonation, pauses and sighs you give off when answering a question. In other words, even if your spoken answers convey intelligence and confidence, your body language during job interviews may be saying exactly the opposite.

"Our nonverbal messages often contradict what we say in words," says Arlene Hirsch, a Chicago career consultant. "When we send mixed messages, or our verbal messages don't agree with our body language, our credibility can crumble because most smart interviewers will believe the nonverbal over the verbal."

Unemployed job seekers, for example, are often so traumatized by their long and difficult job hunts that they appear downcast, even when discussing their strengths. Tough questions can throw them off balance, and their anxiety may cause them to fidget or become overly rigid. Since nonverbal communication is considered more accurate than verbal communication, this kind of behavior reveals your *inner* confidence, say career counselors. The words that you sayduring an interview can be deceiving – sometimes people don't mean what they say or say what they mean – but your job interview body language is subconscious, and thus more spontaneous and less controlled.

Still, many people discount the importance of job interview body language because they've been trained to place more emphasis on spoken words instead. To become more adept at interpreting and using body language, career advisers suggest that you heighten your awareness of nonverbal signals and learn to trust your "gut" instinct.

Once you've learned to harness your body's nonverbal forms of communication, use the following tips to accentuate your job interview body language so that you appear more professional and self-assured:

STEPS TO SUCCEED IN INTERVIEWS

There are a multitude of opinions on how to succeed in a job interview. In my short tenure as a recruiter, I've spoken to hundreds of successful candidates about their interviewing experiences. The following is a short list full of helpful information that will give you the best possible chance for that same success!

Study information about the company through its website and other forms of information that you can find out about them, such as professional networking website profiles. Learn everything that you can about the company and don't forget to take notes to study in advance of the interview (if you have reasonable time before the interview). The more you learn the better chance you'll have to advance through to the next step in the hiring process.

Always be on time for your interview. Arrive 10-15 minutes early. You may need to fill out forms related to the job, and it will help that you are finished before the actual interview is scheduled. Make sure you have a contact phone number available in case of an emergency during your travel time to the interview. When you arrive, ask the receptionist for the name of the interviewer, and write it down! The receptionist is your first point of contact. Be genuine as you communicate, as they will have an impact with any comments they may make to the interviewer.

Always dress for professionally. If you look professional, you'll likely be treated with professional respect. Wear clean and comfortable attire. Avoid casual clothing such as blue jeans and T-Shirts (even if you would wear this type of clothing during actual work hours).

There is a difference between being cocky and confident. Confidence comes from being prepared. Cockiness comes from living the life of an idiot. Don't be so foolish to think that you are better than anyone else interviewing for the position. Just be as prepared as you can possibly be. If you're prepared, you'll come across as confident. If not...well!

Your resume is an extremely important tool. Have extra copies available to the interviewer. Make sure (in advance) that your resume is very well prepared. It should "fit" the job description and meet the minimum requirements in the description. Make sure you have indicated on your resume what each company you have worked for did, what did they produce or manufacture. This will give additional insight to the interviewer about your work history.

Be polite and considerate of the person interviewing you. Their time is valuable and you must respect this. Be prepared to ask short questions that will get their attention and more than a yes or no answer. Show them that you have come prepared! Show them that you are genuinely interested in getting an offer.

Do you ask for the position? YES! Just remember to use caution in how you ask. I can't begin to tell you how to ask. Only you will know based on how the interview has gone. If the interview went well, just be polite, avoid over confidence and ask this way...I believe that I've shown you I'm qualified for the position, I'd like to ask for the job!

You've always heard that it is a great idea to send a thank you note or email to the interviewer. This is still great advice, and one point that should never be missed! How long you should wait is a matter of how your interview went. Be realistic about the success of the interview. If it did not go well, send one anyway, indicating your understanding of the end result and the fact that you value their time spent (this is a great method of bridge building for future interviews). If it went well, send one indicating the same things and include a reminder of something you both had in common related to the company

Practice mock interview in classrooms with presentations on self

Self-presentation is expressive. We construct an image of ourselves to claim personal identity, and present ourselves in a manner that is consistent with that image. If we feel like this is restricted, we exhibit reactance/be defiant. We try to assert our freedom against those who would seek to curtail our self-presentation expressiveness. A classic example is the idea of the "preacher's daughter", whose suppressed personal identity and emotions cause an eventual backlash at her family and community. People adopt many different impression management strategies. One of them is ingratiation, where we use flattery or praise to increase our social attractiveness by highlighting our better characteristics so that others will like us

HIGHLIGHT YOUR POSITIVE AND NEGATIVE TRAITS OF YOUR PERSONALITY

Positive Trait

Dedicated

If you are someone who takes your work seriously and consistently performs at peak levels, this is a personality trait you should highlight in your job interviews. Employers are looking for employees who have a passion for their jobs and aren't simply punching a time clock to earn a paycheck. If you take pride in your work and strive to continually produce the best product or service possible, make this personality trait a key aspect of your interview highlights.

Timely

Being on time for work and on deadline for projects is a key "must" for employers. If you are punctual, deadline- focused and prepared for every meeting an hour ahead of schedule, highlight this information for potential employers. This personality trait demonstrates that you are unlikely to make clients wait, leave customers unattended or fail to prepare an important presentation on schedule.

Personable

Kindness, graciousness and professionalism are all significant personality traits employers look for. Having a sense of humor, a calm attitude and an overall outgoing, personable nature marks you as someone who is easy to get along with and work with. Even if you are interviewing for a serious type of position, or don't want to be viewed as a pushover, a pleasant personality and genial nature can earn extra points with potential employers.

Creative

If you can brainstorm and think outside the box, emphasize the creative aspect of your personality during job interviews. Regardless of the industry, creative thinkers are valued corporate assets. Outline ways in which your creativity has been of value to employers in the past.

Loyal

Perhaps one of the greatest personality traits employees value in staffers is loyalty. If you stick with a project through thick and thin, share credit with others and never take advantage of professional relationships, this is something potential employers should know about you. Emphasize your loyal personality by outlining your longevity in past positions.

Negative Trait

Flip or Over-Confident Attitude

Presenting yourself in a confident manner is good. Coming across as a know-it-all who considers

himself better than everyone else is bad. Don't exaggerate your skills or performance abilities and don't outline achievements in a boastful manner. You can set yourself apart as a highly qualified and talented candidate without resorting to bragging or coming across as an overly-aggressive person who will be hard to manage or work with.

Hostility

Even if you previously worked for the most abusive boss in the industry, avoid talking poorly about him or other colleagues during your interview. Don't complain about past working conditions or low salaries, and never malign a company or its products and services. If you had a bad work experience and you're asked why you left the job, simply explain that you decided to explore new opportunities. Chances are, if you're coming from a position in a similar industry and you were employed with a problem company, your interviewer knows about the poor working conditions. You'll be respected for holding your tongue and not putting down your old boss.

Electronics Use

Turn off your cell phone before you even walk into the interview setting. Never check your e-mail or text messages during an interview. This rule applies to all electronic devices, including laptops and tablets. If you forget to turn your phone off and it rings during the interview, apologize and silence it or let it go to voicemail. Never pick it up and begin a conversation.

Vulgar Language

Don't use slang or poor grammar during an interview and never use foul language. Try to avoid words and expressions such as, "yeah," "ya know" and too many "um's." the way you present yourself verbally says a lot about how you will interact with clients and customers, so speak clearly and authoritatively with professionalism and respect.

DEALING WITH PEOPLE WITH FACE TO FACE

Communicating meaningfully is becoming more difficult than ever before. While technology has created an ever- increasing number of ways to communicate rapidly over great distances, many people are now so well insulated and protected by these devices we use that we are losing the skills and abilities to communicating in the most influentialway—face to face. There's a real danger to the maintenance and perpetuation of meaningful communications and personal and professional relationships. If you become overly dependent on e-mail or text messages, you focus on the object, but not the person. As a result, you become uncomfortable communicating face to face.

Tweets, text messages, e-mail, and Facebook posts all transmit words over distances so they can be received without the sender's presence. The human element and context are absent.

These messages are typically short, sequential, and directed. There's no instantaneous interaction or connection that allows the other person to understand the tone, inflection, or emotion that is carried with the words. The sender cannot effectively project the elements of trust, confidence, credibility, and concern that are crucial to developing and building a relationship. That failure to convey the feelings that accompany the words so people build trust, credibility, and understanding can have a phenomenal impact on business and success, including:

- Miscommunication and understanding
- Wasted time
- Lost profits
- A minimized ability to effectively project trust, confidence, and credibility to build relationships

Meaningful communications that carry these powerful and important characteristics can only be achieved in face-to-face interactions. Communicating with impact and achieving influence is not only about what you say—it's also how you say it. You have influence on others because you see their face, observe and experience their message, and actively listen and engage their interest to build relationships.There are also certain topics of conversation where face-to-face communication will be the best way to achieve clarity and understanding needed for mutual success and beneficial action. These include:

- Negotiating salaries, vacations, and termination
- Resolving a dispute, challenge, or conflict between two or more people or organizations
- Seeking clarification after written communications have failed

Face-to-face communication is a crucial skill. It requires you to focus. You must be comfortable in the presence of other people for more than a few minutes. Communicating with impact and influence face to face also requires discipline, determination, and self-control.

To increase your impact and influence, begin applying these eight must-haves:

1.Make your moments together count. Everyone has the right to speak. Listen before you speak.

Earn the right to be heard. Think about what you want to say before you say it. Make every communication moment worth your and your listener's time. Every word counts. Think before you speak. Tailor what you say to meet your listener's needs.

2.Pay attention by listening for the unspoken emotions. Concentrate on the speaker closely. Focus intently on their face. Do not let your eyes dart away and drift off, since that signals you are no longer paying attention. Do not interrupt. Wait to speak only when the person has finished what they want to say. Hear their words and read their face so you gain maximum understanding of the why behind their words.

3.Honor the other person's time. Prepare and get to the point quickly by speaking in short and concise sentences. Replace your non-words ("uh," "um," "so," "you know…") with a pause to find your thought. Avoid rambling andcluttering your message with unnecessary points. Ask for a clear and specific action. Don't take 20 minutes when you

only asked for 10.

4.Prepare for your face-to-face meeting ahead of time. K.N.O.W. your listener.

K: What does your listener know about your topic?

N: What does your listener need to know to take the action you want them to take in the time frame you have for this conversation?

O: What is your listener's opinion about your topic?

W: Who is your listener? What additional information do you know about your listener to help you customize your message for them?

Tailor your agenda and message to achieve the understanding you need and to influence your listener to act on what

you have to say.

5.Watch your body language. Avoid non-verbal abuse. Every movement you make counts. Control your facial expressions. Don't smile, snicker, whistle, roll your eyes, grimace, look sideways, wink, or send the evil eye. Your behavior and non-verbal cues are as important as the words you say. Don't fidget, act nervous, express fear, or allow your posture to convey uncertainty, insincerity, lack of caring, arrogance, overconfidence, dismay, or criticism.

6.Be sincere and authentic. Speak in your authentic voice. Be sincere, be genuine, and allow others to see the real you.

7.Maintain the power of the floor. Be interesting. Watch for the signs that you are no longer the center of attention:

- Your listener begins working on their Blackberry, iPad, iPhone, etc.
- Your listener starts nodding off.
- Your listener begins to have side conversations.
- Your listener interrupts you.

Stop. Earn their attention. Get back on track.

8. Ask for feedback. Face-to-face communications is a two-way street. Balanced feedback allows people to be relaxed and comfortable. However, when people start feeling comfortable, they also may become lazy and lose their professionalism. Don't forget who you are and what you are doing. Ask for specific feedback on things such as the points you raised, the manner in which you presented, the way you responded. Give yourself feedback by asking, "What worked and what didn't work?"

UNIT –IV

QUALITIES OF A LEADER

Having a great idea and assembling a team to bring that concept to life is the first step in creating a successful business venture. While finding a new and unique idea is rare enough; the ability to successfully execute this idea is what separates the dreamers from the entrepreneurs. However you see yourself, whatever your age may be, as soon as you make that exciting first hire, you have taken the first steps in becoming a powerful leader. When money is tight, stress levels are high, and the visions of instant success don't happen like you thought, it's easy to let those emotions get to you, and thereby your team. Take a breath, calm yourself down, and remind yourself of the leader you are and would like to become. Here are some key qualities that every good leader should possess, and learn to emphasize.

Honesty

Whatever ethical plane you hold yourself to, when you are responsible for a team of people, its important to raise the bar even higher. Your business and its employees are a reflection of yourself, and if you make honest and ethical behavior a key value, your team will follow suit.v

Ability to Delegate

Finessing your brand vision is essential to creating an organized and efficient business, but if you don't learn to trust your team with that vision, you might never progress to the next stage. Its important to remember that trusting your team with your idea is a sign of strength, not weakness. Delegating tasks to the appropriate departments is one of the most important skills you can develop as your business grows. The emails and tasks will begin to pile up, and the moreyou stretch yourself thin, the lower the quality of your work will become, and the less you will produce. The key to delegation is identifying the strengths of your team, and capitalizing on them.

Communication

Knowing what you want accomplished may seem clear in your head, but if you try to explain it to someone else and are met with a blank expression, you know there is a problem. If this has been your experience, then you may want to focus on honing your communication skills. Being able to clearly and succinctly describe what you want done is extremely important. If you can't relate your vision to your team, you won't all be working towards the same goal.

Sense of Humor

If your website crashes, you lose that major client, or your funding dries up, guiding your team through the process without panicking is as challenging as it is important. Morale is linked to productivity, and it's your job as the team leader to instill a positive energy. That's where your sense of humor will finally pay off. Encourage your team to laugh at the mistakes instead of crying. If you are constantly learning to find the humor in the struggles, your work environment will become a happy and healthy space, where your employees look forward to working in, rather than dreading it.

Confidence

There may be days where the future of your brand is worrisome and things aren't going according to plan. This is true with any business, large or small, and the most important thing is not to panic. Part of your job as a leader is to put out fires and maintain the team morale. Keep up your confidence level, and assure everyone that setbacks are natural andthe important thing is to focus on the larger goal. As the leader, by staying calm and confident, you will help keep the team feeling the same. Remember,

your team will take cues from you, so if you exude a level of calm damage control, your team will pick up on that feeling. The key objective is to keep everyone working and moving ahead.

Commitment

If you expect your team to work hard and produce quality content, you're going to need to lead by example. There is no greater motivation than seeing the boss down in the trenches working alongside everyone else, showing that hard work is being done on every level. By proving your commitment to the brand and your role, you will not only earn the respect of your team, but will also instill that same hardworking energy among your staff. It's important to show your commitment not only to the work at hand, but also to your promises.

Positive Attitude

You want to keep your team motivated towards the continued success of the company, and keep the energy levels up. Whether that means providing snacks, coffee, relationship advice, or even just an occasional beer in the office, remember that everyone on your team is a person. Keep the office mood a fine balance between productivity and playfulness.

Creativity

Some decisions will not always be so clear-cut. You may be forced at times to deviate from your set course and make an on the fly decision. This is where your creativity will prove to be vital. It is during these critical situations that your team will look to you for guidance and you may be forced to make a quick decision. As a leader, it's important to learn to think outside the box and to choose which of two bad choices the best option is. Don't immediately choose the firstor easiest possibility; sometimes it's best to give these issues some thought, and even turn to your team for guidance. By utilizing all possible options before making a rash decision, you can typically reach the end conclusion you were aiming for.

Ability to Inspire

Creating a business often involves a bit of forecasting. Especially in the beginning stages of a startup, inspiring your team to see the vision of the successes to come is vital. Make your team feel invested in the accomplishments of the company. Whether everyone owns a piece of equity, or you operate on a bonus system, generating enthusiasm for the hard work you are all putting in is so important. Being able to inspire your team is great for focusing on the future goals, but it is also important for the current issues.

When you are all mired deep in work, morale is low, and energy levels are fading, recognize that everyone needs a break now and then.

KNOWING YOUR SKILLS AND ABILITIES

One of the most important things you can do before looking for work or an alternative career is to consider what skills and abilities you already have. These are your most valuable assets and are very important.

Three kinds of skills you need in the world of work are:

- technical;
- transferable; and
- Personal.

Technical skills are the specialized skills and knowledge required to perform specific duties, sometimes referred to as 'work skills'. For example:

Driving a forklift	Bookkeeping/MYOB	Nursing
Information technology	Machine operating	Accounting
	Mechanic	

Each one of these skills is made up of specific skills a person must be able to do in order to complete technical tasks.

Transferable skills are the skills required to perform a variety of tasks. They are your greatest asset as they can be 'transferred' from one area of work to another.

Customer service	Planning/organisational	Driving
Problem solving	Time management	Staff management
Teamwork	Reasoning and creativity	Leadership

These skills can be useful when you are trying to make a career change.

Personal skills are the individual attributes you have such as personality and work habits. These often describe what you are like and how you would naturally go about doing things.

□ Working under pressure □ Trustworthy □ Self-motivated	□ Honest and reliable □ Fast learner □ Professional	□ Has initiative □ Planning/organisational □ Loyal

GROUP DISCUSSION TECHNIQUES

Discussions of any sort are supposed to help us develop a better perspective on issues by bringing out diverse view points. Whenever we exchange differing views on an issue, we get a clearer picture of the problem and are able to understand it. The understanding makes us better equipped to deal with the problem. This is precisely the main purpose of a discussion. The dictionary meaning of the word Group Discussion is to talk about a subject in detail. So, group discussion may refer to a communicative situation that allows its participants to express views and opinions and sharewith other participants. It is a systematic oral exchange of information, views and opinions about a topic, issue, problem or situation among members of a group who share certain common objectives.

GD is essentially an interactive oral process. The group members need to listen to each other and use voice and gesture effectively, use clear language and persuasive style.

GD is structured: the exchange of ideas in a GD takes place in a systematic and structured way. Each of the participants gets an opportunity to express his/her views and comments on the views expressed by other members of the group. GD involves a lot of group dynamics, that is, it involves both -

person to person as well as group to group interactions. Every group member has to develop a goal oriented or group oriented interaction. A participant needs to be aware of needs of other group members and overall objectives of the discussion.

Definition: Group discussion may be defined as – a form of systematic and purposeful oral process characterized by the formal and structured exchange of views on a particular topic, issue, problem or situation for developing information and understanding essential for decision making or problem solving. There are several types of oral group communication. In Public Speaking, the speaker is evaluated by the audience; however there is not much interaction between audience and speaker. A chairperson conducts the meeting and controls and concludes the deliberations.

Group Discussion differs from debate in nature, approach and procedure. Debates include representation of two contrasting viewpoints while GD can include multiple views. A GD may help achieve group goals as well as individual needs. The examiner observes the personality traits of several candidates who participate in the G.D.

Importance of Group Discussion skills

A Group Discussion helps problem solving, decision making and personality assessment. Whether one is a student, a job seeker, a professional engineer or a company executive one needs effective GD skills. Students need to participate in academic discussions, meetings, classroom sessions or selection GDs for admission to professional courses. A job- seeker may be required to face selection GDs as part of the selection process. Professionals have to participate in different meetings at the workplace .In all these situations, an ability to make a significant contribution to group deliberation and helping the group in the process of decision making is required. The importance of GD has increased in recent times due to its increasing role as an effective tool in a) problem solving b) decision making c) personality assessment. In any situation of problem, the perceptions of different people are discussed, possible solutions are suggested. The best option is chosen by the group. While taking a decision, the matter is discussed, analyzed, interpreted and evaluated.

Characteristics of Successful Group Discussion

For any group discussion to be successful, achieving group goal is essential. Following characteristics

are necessary:

Having a clear objective : The participants need to know the purpose of group discussion so that they can concentrate during the discussion and contribute to achieving the group goal. An effective GD typically begins with a purpose stated by the initiator.

Motivated Interaction: When there is a good level of motivation among the members, they learn to subordinate the personal interests to the group interest and the discussions are more fruitful.

Logical Presentation: Participants decide how they will organize the presentation of individual views, how an exchange of the views will take place, and how they will reach a group consensus. If the mode of interaction is not decided, few of the members in the group may dominate the discussion and thus will make the entire process meaningless.

Cordial Atmosphere: Development of a cooperative, friendly, and cordial atmosphere avoids the confrontation between the group members.

Evaluation in a GD

In any kind of GD, the aim is to judge the participants based on personality, knowledge, communicative ability to present the knowledge and leadership skills. Today team players are considered more important than individual contributors. Hence the potential to be a leader is evaluated and also ability to work in a team is tested. The evaluators generally assess the oral competence of a candidate in terms of team listening, appropriate language, clarity of expression, positive speech attitudes and adjustments, clear articulation, and effective non-verbal communication.

Personality: Even before one starts communicating, impression is created by the appearance, the body language, eye- contact, mannerisms used etc. The attire of a participant creates an impression, hence it is essential to be dressed appropriately. The hairstyle also needs to suit the occasion. Other accessories also have to be suitable for the occasion. The facial expression helps to convey attitudes like optimism, self-confidence and friendliness. The body language, anon-verbal communication skill gives important clues to personality assessment. It includes the posture of a person, theeye-contact and

overall manner in which one moves and acts. In the entire participation in the GD, the body language has an important role in the impact created.

Content: Content is a combination of knowledge and ability to create coherent, logical arguments on the basis of that knowledge. Also a balanced response is what is expected and not an emotional response. In a group discussion, greater the knowledge of the subject more confident and enthusiastic would be the participation. Participants need to have a fair amount of knowledge on a wide range of subjects. The discussion of the subject must be relevant, rational, convincing and appealing to the listeners. One needs to keep abreast with national and international news, political, scientific, economic, cultural events, key newsmakers etc. This has to be supplemented by one's own personal reasoning and analysis. People with depth and range of knowledge are always preferred by dynamic companies and organizations.

Communication Skills:

First and foremost feature of communication skills is that it is a two way process. Hence the communicator has to keep in mind the listeners and their expectations. The participants need to observe the group dynamics. Since GD tests one's behavior as well as one's influence on the group, formal language and mutual respect are obvious requirements. One may not take strong views in the beginning itself but wait and analyse the pros and cons of any situation. If one needs to disagree, learn to do so politely. One can directly put forward the personal viewpoint also. One may appreciate the good points made by others can make a positive contribution by agreeing to and expanding an argument made by another participant. An idea can be appreciated only when expressed effectively. A leader or an administrator has the ability to put across the idea in an influential manner. Hence the participants in a group discussion must possess not only subject knowledge but also the ability to present that knowledge in an effective way. Since oral skills are used to put across the ideas, the ability to speak confidently and convincingly makes a participant an impressive speaker. The members of the selection committee closely evaluate the oral communication skills of the candidates. The effectivecommunication would imply use of correct grammar and vocabulary, using the right pitch, good voice quality, clear articulation, logical presentation of the ideas and above all, a positive attitude.

Listening Skills:

Lack of active listening is often a reason for failure of communication. In the GD, participants often forget that it is a group activity and not a solo performance as in elocution. By participating as an active listener, he/she may be able to contribute significantly to the group deliberations. The listening skills are closely linked to the leadership skills as well.

Leadership Skills:

The success of any group depends to a large extent upon the leader. One of the common misconceptions about leadership is that the leader is the one who controls the group.There are different approaches to the concept of leadership. By studying the personality traits of great leaders or actual dimensions of behavior to identify leadership one can learn to cultivate essential traits of leaders. In a GD, a participant with more knowledge, one who is confident, one who can find some solution to the problem and display initiative and responsibility will be identified as the leader. A candidate's success in a GD test will depend not only on his/her subject knowledge and oral skills but also on his/her ability to provide leadership to the group. Adaptability, analysis, assertiveness, composure, self-confidence, decision making, discretion, initiative, objectivity, patience, and persuasiveness are some of the leadership skills that are useful in proving oneself as a natural leader in a GD. The leader in a group discussion should be able to manage the group despite differences of opinion and steer the discussion to a logical conclusion within the fixed time limit. In a selection GD, the group, which may consist of six to ten persons, is given a topic to discuss within 30 to 45 minutes. After announcing the topic, the total GD time, and explaining the general guidelines and procedures governing the GD, theexaminer withdraws to the background leaving the group completely free to carry on with the discussion on its own without any outside interference. In the absence of a designated leader to initiate the proceedings of the discussion, the group is likely to waste time in cross talks, low-key conversations, cross-consultations, asides, and so on. The confusion may last until someone in the group takes an assertive position and restores the chaos into order. It could be any candidate. In order to get the GD started, the assertive, natural leader will have to remind the group of its goal and request them to start the discussion without wasting time.

Leadership functions during a GD include initiative, analysis, and assertiveness and so on. GD does not have a formal leader, hence one of the participants is expected to take the initiative. The leader will promote positive group interactions; point out areas of agreement and disagreement;. Help keep the

discussion on the right track and lead the discussion to a positive and successful conclusion within the stipulated time. The ability to analyse a situation is a quality of leadership. Analytical skills and objectivity in expressing opinions are absolute requirements for leadership. With patience and composure one can develop the analytical skills. Reaching consensus by considering the group opinion will make the GD successful. Assertiveness that is an ability to bring order to the group by handling the conflict is another desirable quality of leadership. Self confidence is a quality which helps win the agreement from other participants.

DEBATE

Debate is a formal contest of argumentation between two teams or individuals. More broadly, and more importantly, debate is an essential tool for developing and maintaining democracy and open societies. More than a mere verbal or performance skill, debate embodies the ideals of reasoned argument, tolerance for divergent points of view and rigorous self-examination. Debate is, above all, a way for those who hold opposing views to discuss controversialissues without descending to insult, emotional appeals or personal bias. A key trademark of debate is that it rarely ends in agreement, but rather allows for a robust analysis of the question at hand. Debate is not a forum for asserting absolute truths, but rather a means of making and evaluating arguments that allows debaters to better understand their own and others' positions. This sense of a shared journey toward the truth brings debaters closer together, even when they represent opposing sides of an issue or come from vastly different cultures or social classes. In so doing, debate fosters the essential democratic values of free and open discussion.

EXTEMPORE

"Extempore" or "ex tempore" refers to a stage or theater performance that is carried out without preparation or forethought. Most often the term is used in the context of speech, singing and stage acting.

Well basically it's about projecting confidence and telling what you know in a short span of time. Firstly your body language should convey the fact that you are not shaky about coming to stage One should feel the confidence within oneself

Secondly you should know a few facts about the topic you are going to talk about. For this its a good idea if you go through the daily newspapers and have a general understanding about things. Then its all

about talking effectively without stuttering and good posture. Your body language should project good confidence. At the same time you also shouldn't appear smug. Well, when it comes to content, its better if you organize your points and tell them in a systematic manner. Its good if you mention most of the points without going much deep in to any of them. Its always better to limit your speech to the time allotted for one speech, especially if it's a competition.

Difference between Debate and Extempore

Debate is two or more people speaking to each other-two way traffic, Extempore means without preparation as opposed to prepared speech. Debate is discussing about a particular issue, exploring the pros and cons as well as one's thoughts and convictions to put forth his views and ideas. Extempore, means delivering a talk or address without much back home preparation, just like that address instantaneously to the audience.

INCREASE YOUR PROFESSIONALISM

Proficient at job

First and foremost, being good at your job is what defines you as someone with a high degree of professionalism in the workplace. A fancy wardrobe or a crisp hand shake is no match for the skills that make you effective at your job. Before you consider anything else, assess all the skills you need to perform all aspects of you job. Identify strengths and weaknesses and develop a plan to improve any areas that will help you be more effective.

Clear on the expectations of the job

When a professional is clear on what is expected from their role and act accordingly they convey competence and put others at ease. They focus on carrying out the actions that help them meet those expectations. This conveys confidence as a professional. When others learn they can count on you to be focused and competent, they can then focus on their job. When they don't have to manage you or keep you from getting distracted you become an entity they can count on.

Able to separate personal from professional

Have you ever had a bad day and behaved in a way you were not proud of? If so, you've learned what

it is like to experience professionalism from someone else. If the person you were dealing with focuses on serving you, rather than getting offended by you as a person, you're likely to notice. You may even make a point to change your demeanor in acknowledgement of their professional attitude. Depending on how important the transaction is you may leave with a feeling of gratitude for the maturity that you experienced. When it comes to being in the other person's shoes, your maturity and ability to focus on doing your job will separate you from your competition.

Practice “Right Speech” Right speech is a term that comes from Buddhist teachings. It refers to how we talk about others. Do you engage in water cooler gossip or do you politely remove yourself from negative banter? If you must discuss the actions of a coworker or client, consider the reason for the discussion. Is it about problem solving? Is it designed to take a corrective action or is it simply an expression of bad feelings. Also consider who you are sharing the information with. Are you charitable and non-judgemental or are you angry and vengeful. When it comes to karma and business transactions the energy you put out will come back to you.

Demonstrate Appropriate Enthusiasm

When you enjoy your life and your job, it's obvious. Others see it in your behaviors. When you smile, when you offer to assist them and with every project you tackle, you build self-confidence and radiate enthusiasm. While it's possible to overdue enthusiasm, the problem always seems to come from a lack of it. A colleague explains, "insurance policies aren't all that interesting in and of themselves but my customers are interesting and I enjoy helping them." If you don't feel like this at your job, chances are you're not demonstrating appropriate enthusiasm because it is not something thatyou can fake. If professionalism is important to you and your business, consider these four ways to improve on it. Practice these 4 key concepts. With practice you will improve your self-confidence and professionalism. Over time and the efforts you put forth will be noticed and met with appreciation. Colleagues and clients alike will respond to your increasing professionalism with positive acknowledgement. Want help implementing them? Consulting with a business coach might be the first step. Holding a staff workshop might be another solution.

Audio Video Recording

An audio video recording is a recording that contains both audio and video information, usually gained by utilizing a system that contains both a microphone and camera. There are a number of different

ways in which this type of recording can be achieved, though film and video cameras that include a built in microphone are quite common. With the rise in digital technology for capturing video and audio, this type of recording has become easier to achieve and store. An audio video recording can also be created without the use of a camera or microphone, through software that can record audio and video being viewed and heard on a computer.

While many people may think of both audio and video in reference to a single recording, the term "audio video recording" specifically indicates such a recording. This distinction largely stems from cameras that were only capable of capturing video images and not audio. For this type of recording, the audio would have to be recorded using a separate microphone and recorder, and the audio and video would then need to be synchronized during playback. An audio video recording, however, includes both audio and video signals recorded together, ensuring synchronicity when the recording is played.

LEADERSHIP QUIZ WITH CASE STUDY

Aditya Birla Group's Growth Strategy

In 2008, the Aditya Birla Group (ABG) was a US$ 28 billion corporation. It employed 100,000 people belonging to 25 nationalities and over 50% of its revenues were attributed to its overseas operations in countries like the US, the UK, China, Germany, Hungary, and Brazil, among others.

The group's product portfolio comprised Aluminum (Hindalco-Indal), Copper (Birla Copper), Fertilizers (Indo Gulf Fertilizers Ltd.), Textiles and Cement (Grasim Industries Ltd.), Insulators (Birla NGK Insulators Pvt. Ltd.),

Viscose Filament Yarn (Indian Rayon and Industries Ltd.), Carbon black (Birla Carbon), Insurance (Birla Sun Life Insurance Company Ltd.), Telecommunications (Idea Cellular Ltd.)

and BPO (Minacs Worldwide Ltd.).

In 2007, the group acquired Novelis Inc., the Atlanta (US)-based aluminum producer to become

one of the largest rolled-aluminum products manufacturers in the world. The group had also acquired a majority stake in Indal from Alcan of Canada in the year 2000, and this had positioned it in the value-addition chain of the business, from metal to downstream products.

Birla Copper enjoyed a good market share in the country and the acquisition of mines in Australia in the year 2003 elevated it to an integrated copper producer. Indo-Gulf Fertilizers possessed a brand that commanded strong cash flows and a leadership position in the fertilizer industry. The group had entered into a 50 : 50 joint venture with NGK Corporation of Japan for its insulators division in 2002. This was expected to provide ABG access to the latest in product and manufacturing technology for the insulators division and also to open up the path to global markets.

In 2006, the group purchased the equity holding of NGK and made the venture its subsidiary.Group company, Birla Sun Life, offered insurance and mutual fund products in the Indian market. In 2006, the group acquired Minacs Worldwide, a BPO company, and acquired Tata's stake in Idea Cellular[7]. In 2007, the group acquired Trinethra, a chain of retail stores.

The group's strategy toward the business portfolio was to exit from those areas of business where they had a minor presence or where losses were being incurred and to consolidate and build upon operations where competencies and business strengths existed. For instance, the group's textiles division Grasim had consolidated its operations by closing down operations at its pulp and fiber plants located at Mavoor and had sold the loss making fabric operations at Gwalior in 2002.

The group also divested itself of its stake in Mangalore Refinery and Petrochemicals Ltd. to the leading Indian oil company ONGC in 2002. Analysts felt that the group's ability to grow had stemmed largely from the emphasis placed on building meritocracy in the group. Under the leadership of Kumar Mangalam Birla (Birla), several initiatives were taken with the focus on learning and relearning, performance management, and organizational renewal.

Birla also instituted steps to retire aged managers and replaced them with young managers who came in with fresh and 'out of the box' ideas.The group instituted Gyanodaya, the group's learning center, to facilitate transfer of best practices across the group companies. The training methodology comprised classroom teaching and e-learning initiatives and the training calendar was accessible to the group employees through the group-wide intranet.

The group also put in place 'The Organizational Health Survey' aimed at tracking the satisfaction levels of the group's managers. The survey was seen as a gauge of the happiness at work index in the group. The implementation of these initiatives resulted in the group becoming one of the preferred employers in Asia

.Toward performance management, the group had instituted the Aditya Birla Sun awards to recognize the successes of the group companies. This resulted in information sharing and encouraged healthy competition among these companies.

Q1) Critically analyze the growth strategy adopted by the Aditya Birla Group. What are your views on the business portfolio adopted by the group?

Q2) Analyze the initiatives taken by the group on the personnel and culture front under the leadership of Kumar Mangalam Birla

Dialogue session on Current topics, Economy, Education System, Environment, Politics

- **Economy:-** An economy (Greek οίκος-household and νέμομαι - manage) or economic system consists of the production, distribution or trade, and consumption of limited goods and services by different agents in a given geographical location. The economic agents can be individuals, businesses, organizations, or governments Macroeconomics is focused on the movement and trends in the economy as a whole, while in microeconomics the focus is placed on factors that affect the decisions made by firms and individuals. The Economy of India is the seventh-largest in the world by nominal GDP and the third-largest by purchasing power parity (PPP).

- **Education System**- Education is the process of facilitating learning. Knowledge, skills, values, beliefs, and habits of a group of people are transferred to other people, through storytelling, discussion, teaching, training, or research. Education frequently takes place under the guidance of

educators, but learners may also educate themselves in a process called autodidactic learning. Any experience that has a formative effect on the way one thinks, feels, or acts may be considered educational. Education is commonly and formally divided into stages such as preschool, primary school, secondary school and then college, university or apprenticeship. The methodology of teaching is called pedagogy.

- **Environment-** Environment (biophysical), the physical and biological factors along with their chemical interactions that affect an organism or a group of organisms. Environment (systems), the surroundings of a physical system that may interact with the system by exchanging mass, energy, or other properties. The natural environment encompasses all living and non-living things occurring naturally on Earth or some region thereof. It is an environment that encompasses the interaction of all living species. Climate, weather, and natural resources that affect human survival and economic activity.

- **Politics-** Politics is the practice and theory of influencing other people. Politics involves the making of a common decision for a group of people, that is, a uniform decision applying in the same way to all members of the group.Politics in India take place within the framework of its constitution, as India is a federal parliamentary democratic republic in which the President of India is the head of state and the Prime Minister of India is the head of government. India follows the dual polity system, i.e. a double government which consists of the central authority at the centre and states at the periphery. The constitution defines the organization, powers and limitations of both central and state governments, and it is well-recognized, rigid and considered supreme; i.e. laws of the nation must conform to it. There is a provision for a bicameral legislature consisting of an Upper House, i.e. Rajya Sabha, which represents the states of the Indian federation and a lower house i.e. Lok Sabha, which represents the people of India as a whole. The Indian constitution provides for an independent Judiciary which is headed by the Supreme Court. The court's mandate is to protect the constitution, to settle disputes between the central government and the states, inter-state disputes, and nullify any central or state laws that go against the constitution.

COMPUTER APPLICATION (109)

UNIT I

Computer

A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use.

Functionalities of a computer

- Takes data as input
- Stores the data/instructions in its memory and use them when required
- Processes the data and converts it into useful information
- Generates the output
- Controls all the above four steps

Computer Components

Any kind of computers consists of **HARDWARE** AND **SOFTWARE**.

Hardware:

Computer hardware is the collection of physical elements that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer such as the monitor, mouse, keyboard, computer data storage, hard drive disk (HDD), system unit (graphic cards, sound cards, memory, motherboard and chips), etc. all of which are physical objects that can be touched.

Input Devices:

Input device is any peripheral (piece of computer hardware equipment to provide data and control signals to an information processing system such as a computer or other information appliance.

Central Processing Unit (CPU)

A CPU is brain of a computer. It is responsible for all functions and processes. Regarding computing power, the CPU is the most important element of a computer system.
The CPU is comprised of three main parts:

**** Arithmetic Logic Unit (ALU)***: Executes all arithmetic and logical operations. Arithmetic calculations like as addition, subtraction, multiplication and division. Logical operation like compare numbers, letters, or special characters

**** Control Unit (CU):*** controls and co-ordinates computer components.

1. Read the code for the next instruction to be executed.
2. Increment the program counter so it points to the next instruction.
3. Read whatever data the instruction requires from cells in memory.
4. Provide the necessary data to an ALU or register.

5. If the instruction requires an ALU or specialized hardware to complete, instruct the hardware to perform the requested operation.

* ***Registers*** : Stores the data that is to be executed next, "very fast storage area".

Primary Memory:-

1. **RAM**: Random Access Memory (RAM) is a memory scheme within the computer system responsible for storing data on a temporary basis, so that it can be promptly accessed by the processor as and when needed. It is volatile in nature, which means that data will be erased once supply to the storage device is turned off. RAM stores data randomly and the processor accesses these data randomly from the RAM storage. RAM is considered "random access" because you can access any memory cell directly if you know the row and column that intersect at that cell.
2. **ROM** (Read Only Memory): ROM is a permanent form of storage. ROM stays active regardless of whether power supply to it is turned on or off. ROM devices do not allow data stored on them to be modified.

Secondary Memory:-

Stores data and programs permanently: its retained after the power is turned off

1. **Hard drive (HD):** A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk drive," that store and provides relatively quick access to large amounts of data on an electromagnetically charged surface or set of surfaces.

2. **Optical Disk:** An optical disc drive (ODD) is a disk drive that uses laser light as part of the process of reading or writing data to or from optical discs. Some drives can only read from discs, but recent drives are commonly both readers and recorders, also called burners or writers. Compact discs, DVDs, and Blu-ray discs are common types of optical media which can be read and recorded by such drives. Optical drive is the generic name; drives are usually described as "CD" "DVD", or "Bluray", followed by "drive", "writer", etc. There are three main types of optical media: CD, DVD, and Blu-ray disc. CDs can store up to 700 megabytes (MB) of data and DVDs can store up to 8.4 GB of data. Blu-ray discs, which are the newest type of optical media, can store up to 50 GB of data. This storage capacity is a clear advantage over the floppy disk storage media (a magnetic media), which only has a capacity of 1.44 MB.

3. Flash Disk: A storage module made of flash memory chips. A Flash disks have no mechanical platters or access arms, but the term "disk" is used because the data are accessed as if they were on a hard drive. The disk storage structure is emulated.

Output devices

An output device is any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system (such as a computer) which converts the electronically generated information into human-readable form.

Example on Output Devices:

1. Monitor
2. LCD Projection Panels
3. Printers (all types)
4. Computer Output Microfilm (COM)
5. Plotters
6. Speaker(s)
7. Projector

Software

Software is a generic term for organized collections of computer data and instructions, often broken into two major categories: system software that provides the basic non-task-specific functions of the computer, and application software which is used by users to accomplish specific tasks.

Software Types

A. System software is responsible for controlling, integrating, and managing the individual hardware components of a computer system so that other software and the users of the system see it as a functional unit without having to be concerned with the low-level details such as transferring data from memory to disk, or rendering text onto a display. Generally, system software consists of an operating system and some fundamental utilities such as disk formatters, file managers, display managers, text editors, user authentication (login) and management tools, and networking and device control software.

B. **Application software** is used to accomplish specific tasks other than just running the computer system. Application software may consist of a single program, such as an image viewer; a small collection of programs (often called a software package) that work closely together to accomplish a task, such as a spreadsheet or text processing system; a larger collection (often called a software suite) of related but independent programs and packages that have a common user interface or shared data format, such as Microsoft Office, which consists of closely integrated word processor, spreadsheet, database, etc.; or a software system, such as a database management system, which is a collection of fundamental programs that may provide some service to a variety of other independent applications.

Relationship between Hardware and Software

- Hardware and software are mutually dependent on each other. Both of them must work together to make a computer produce a useful output.
- Software cannot be utilized without supporting hardware.
- Hardware without a set of programs to operate upon cannot be utilized and is useless.
- To get a particular job done on the computer, relevant software should be loaded into the hardware.
- Hardware is a one-time expense.

- Software development is very expensive and is a continuing expense.
- Different software applications can be loaded on a hardware to run different jobs.
- A software acts as an interface between the user and the hardware.
- If the hardware is the 'heart' of a computer system, then the software is its 'soul'. Both are complementary to each other.

Classification of Computers

Computers can be generally classified by size and power as follows, though there is Considerable overlap:

• Personal computer: A small, single-user computer based on a microprocessor. In addition to the microprocessor, a personal computer has a keyboard for entering data, a monitor for displaying information, and a storage device for saving data.

• Workstation: A powerful, single-user computer. A workstation is like a personal computer, but it has a more powerful microprocessor and a higher-quality monitor.

• Minicomputer: A multi-user computer capable of supporting from 10 to hundreds of users simultaneously.

• Mainframe: A powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously.

• Supercomputer: An extremely fast computer that can perform hundreds of millions of instructions per second.

Characteristics of Computer

Speed, accuracy, diligence, storage capability and versatility are some of the key characteristics of a computer. A brief overview of these characteristics are :

• Speed: The computer can process data very fast, at the rate of millions of instructions per second. Some calculations that would have taken hours and days to complete otherwise, can be completed in a few seconds using the computer. For example, calculation and generation of salary slips of thousands of employees of an organization, weather forecasting that requires analysis of a large amount of data related to temperature, pressure and humidity of various places, etc.

• Accuracy: Computer provides a high degree of accuracy. For example, the computer can accurately give the result of division of any two numbers up to 10 decimal places.

• Diligence: When used for a longer period of time, the computer does not get tired or fatigued. It can perform long and complex calculations with the same speed and accuracy from the start till the end.

• Storage Capability: Large volumes of data and information can be stored in the computer and also retrieved whenever required. A limited amount of data can be stored, temporarily, in the primary memory. Secondary storage devices like floppy disk and compact disk can store a large amount of data permanently.

• Versatility: Computer is versatile in nature. It can perform different types of tasks with the same ease. At one moment you can use the computer to prepare a letter document and in the next moment you may play music or print a document. Computers have several limitations too. Computer can only perform tasks that it has been programmed to do.

COMPUTER MEMORY

A memory is just like a human brain. It is used to store data and instructions. Computer memory is the storage space in the computer, where data is to be processed and instructions required for processing are stored. The memory is divided into large number of small parts called cells. Each location or cell has a unique address, which varies from zero to memory size minus one. For example, if the computer has 64k words, then this memory unit has 64 * 1024 = 65536 memory locations. The address of these locations varies from 0 to 65535.

Memory is primarily of three types −

- Cache Memory
- Primary Memory/Main Memory
- Secondary Memory

Cache Memory

Cache memory is a very high speed semiconductor memory which can speed up the CPU. It acts as a buffer between the CPU and the main memory. It is used to hold those parts of data and program which are most frequently used by the CPU. The parts of data and programs are transferred from the disk to cache memory by the operating system, from where the CPU can access them.

Advantages

The advantages of cache memory are as follows −

- Cache memory is faster than main memory.
- It consumes less access time as compared to main memory.
- It stores the program that can be executed within a short period of time.

- It stores data for temporary use.

Disadvantages

The disadvantages of cache memory are as follows −

- Cache memory has limited capacity.
- It is very expensive.

Primary Memory (Main Memory)

Primary memory holds only those data and instructions on which the computer is currently working. It has a limited capacity and data is lost when power is switched off. It is generally made up of semiconductor device. These memories are not as fast as registers. The data and instruction required to be processed resides in the main memory. It is divided into two subcategories RAM and ROM.

Characteristics of Main Memory

- These are semiconductor memories.
- It is known as the main memory.
- Usually volatile memory.
- Data is lost in case power is switched off.
- It is the working memory of the computer.
- Faster than secondary memories.
- A computer cannot run without the primary memory.

Secondary Memory

This type of memory is also known as external memory or non-volatile. It is slower than the main memory. These are used for storing data/information permanently. CPU directly does not access these memories; instead they are accessed via input-output routines. The contents of secondary memories are first transferred to the main memory, and then the CPU can access it. For example, disk, CD-ROM, DVD, etc.

Characteristics of Secondary Memory

- These are magnetic and optical memories.
- It is known as the backup memory.
- It is a non-volatile memory.
- Data is permanently stored even if power is switched off.
- It is used for storage of data in a computer.
- Computer may run without the secondary memory.
- Slower than primary memories.

RAM (Random Access Memory) is the internal memory of the CPU for storing data, program, and program result. It is a read/write memory which stores data until the machine is working. As soon as the machine is switched off, data is erased.

Access time in RAM is independent of the address, that is, each storage location inside the memory is as easy to reach as other locations and takes the same amount of time. Data in the RAM can be accessed randomly but it is very expensive.

RAM is volatile, i.e. data stored in it is lost when we switch off the computer or if there is a power failure. Hence, a backup Uninterruptible Power System (UPS) is often used with computers. RAM is small, both in terms of its physical size and in the amount of data it can hold.

RAM is of two types −

- Static RAM (SRAM)
- Dynamic RAM (DRAM)

1) Static RAM (SRAM)

The word **static** indicates that the memory retains its contents as long as power is being supplied. However, data is lost when the power gets down due to volatile nature. SRAM chips use a matrix of 6-transistors and no capacitors. Transistors do not require power to prevent leakage, so SRAM need not be refreshed on a regular basis.

There is extra space in the matrix, hence SRAM uses more chips than DRAM for the same amount of storage space, making the manufacturing costs higher. SRAM is thus used as cache memory and has very fast access.

Characteristic of Static RAM

- Long life
- No need to refresh

- Faster
- Used as cache memory
- Large size
- Expensive
- High power consumption

Dynamic RAM (DRAM)

DRAM, unlike SRAM, must be continually **refreshed** in order to maintain the data. This is done by placing the memory on a refresh circuit that rewrites the data several hundred times per second. DRAM is used for most system memory as it is cheap and small. All DRAMs are made up of memory cells, which are composed of one capacitor and one transistor.

Characteristics of Dynamic RAM

- Short data lifetime
- Needs to be refreshed continuously
- Slower as compared to SRAM
- Used as RAM
- Smaller in size
- Less expensive
- Less power consumption

Difference between SRAM and DRAM

SRAM	DRAM
1. SRAM has lower access time, so it is faster compared to DRAM.	1. DRAM has higher access time, so it is slower than SRAM.
2. SRAM is costlier than DRAM.	2. DRAM costs less compared to SRAM.
3. SRAM requires constant power supply, which means this type of memory consumes more power.	3. DRAM offers reduced power consumption, due to the fact that the information is stored in the capacitor.
4. Due to complex internal circuitry, less storage capacity is available compared to the same physical size of DRAM memory chip.	4. Due to the small internal circuitry in the one-bit memory cell of DRAM, the large storage capacity is available.
5. SRAM has low packaging density.	5. DRAM has high packaging density.

ROM stands for **Read Only Memory**. The memory from which we can only read but cannot write on it. This type of memory is non-volatile. The information is stored permanently in such memories during manufacture. A ROM stores such instructions that are required to start a computer. This operation is referred to as **bootstrap**. ROM chips are not only used in the computer but also in other electronic items like washing machine and microwave oven.

The various types of ROMs and their characteristics.

1) MROM (Masked ROM)

The very first ROMs were hard-wired devices that contained a pre-programmed set of data or instructions. These kind of ROMs are known as masked ROMs, which are inexpensive.

2) PROM (Programmable Read Only Memory)

PROM is read-only memory that can be modified only once by a user. The user buys a blank PROM and enters the desired contents using a PROM program. Inside the PROM chip, there are small fuses which are burnt open during programming. It can be programmed only once and is not erasable.

3) EPROM (Erasable and Programmable Read Only Memory)

EPROM can be erased by exposing it to ultra-violet light for a duration of up to 40 minutes. Usually, an EPROM eraser achieves this function. During programming, an electrical charge is trapped in an insulated gate region. The charge is retained for more than 10 years because the charge has no leakage path. For erasing this charge, ultra-violet light is passed through a quartz crystal window (lid). This exposure to ultra-violet light dissipates the charge. During normal use, the quartz lid is sealed with a sticker.

4) EEPROM (Electrically Erasable and Programmable Read Only Memory)

EEPROM is programmed and erased electrically. It can be erased and reprogrammed about ten thousand times. Both erasing and programming take about 4 to 10 ms (millisecond). In EEPROM, any location can be selectively erased and programmed. EEPROMs can be erased one byte at a time, rather than erasing the entire chip. Hence, the process of reprogramming is flexible but slow.

Advantages of ROM

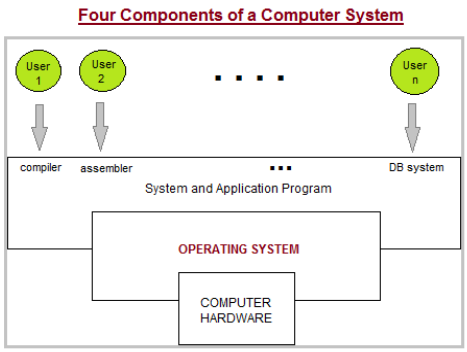
The advantages of ROM are as follows −

- Non-volatile in nature
- Cannot be accidentally changed
- Cheaper than RAMs
- Easy to test
- More reliable than RAMs
- Static and do not require refreshing
- Contents are always known and can be verified

UNIT- II

Introduction to Operating Systems

A computer system has many resources (hardware and software), which may be require to complete a task. The commonly required resources are input/output devices, memory, file storage space, CPU etc. The operating system acts as a manager of the above resources and allocates them to specific programs and users, whenever necessary to perform a particular task. Therefore operating system is the resource manager i.e. it can manage the resource of a computer system internally. The resources are processor, memory, files, and I/O devices. **In simple terms, an operating system is the interface between the user and the machine.**



Two Views of Operating System

1. User's View
2. System View

Operating System: User View

The user view of the computer refers to the interface being used. Such systems are designed for one user to monopolize its resources, to maximize the work that the user is performing. In these cases, the operating system is designed mostly for ease of use, with some attention paid to performance, and none paid to resource utilization.

Operating System: System View

Operating system can be viewed as a resource allocator also. A computer system consists of many resources like - hardware and software - that must be managed efficiently. The operating system acts as the manager of the resources, decides between conflicting requests, controls execution of programs etc.

Operating System Management Tasks

1. **Processor management** which involves putting the tasks into order and pairing them into manageable size before they go to the CPU.
2. **Memory management** which coordinates data to and from RAM (random-access memory) and determines the necessity for virtual memory.
3. **Device management** which provides interface between connected devices.
4. **Storage management** which directs permanent data storage.
5. **Application** which allows standard communication between software and your computer.
6. **User interface** which allows you to communicate with your computer.

Functions of Operating System

1. It boots the computer
2. It performs basic computer tasks e.g. managing the various peripheral devices e.g. mouse, keyboard
3. It provides a user interface, e.g. command line, graphical user interface (GUI)
4. It handles system resources such as computer's memory and sharing of the central processing unit(CPU) time by various applications or peripheral devices.
5. It provides file management which refers to the way that the operating system manipulates, stores, retrieves and saves data.
6. Error Handling is done by the operating system. It takes preventive measures whenever required to avoid errors.

Types of Operating Systems

Following are some of the most widely used types of Operating system.

1. Simple Batch System
2. Multiprogramming Batch System
3. Multiprocessor System
4. Desktop System
5. Distributed Operating System
6. Clustered System
7. Real time Operating System
8. Handheld System

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1) Simple Batch Systems

- In this type of system, there is **no direct interaction between user and the computer**.
- The user has to submit a job (written on cards or tape) to a computer operator.
- Then computer operator places a batch of several jobs on an input device.
- Jobs are batched together by type of languages and requirement.
- Then a special program, the monitor, manages the execution of each program in the batch.

- The monitor is always in the main memory and available for execution.

Advantages of Simple Batch Systems

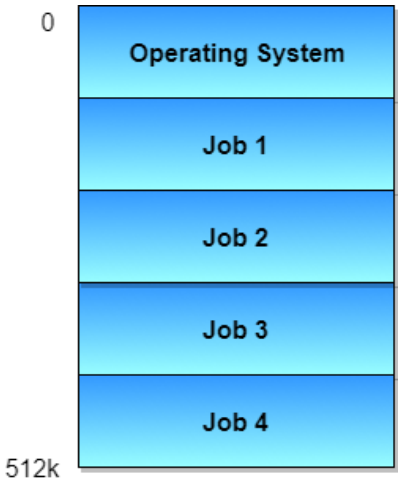
1. No interaction between user and computer.
2. No mechanism to prioritise the processes.

2) Multiprogramming Batch Systems

- In this the operating system picks up and begins to execute one of the jobs from memory.
- Once this job needs an I/O operation operating system switches to another job (CPU and OS always busy).
- Jobs in the memory are always less than the number of jobs on disk(Job Pool).
- If several jobs are ready to run at the same time, then the system chooses which one to run through the process of **CPU Scheduling**.
- In Non-multiprogrammed system, there are moments when CPU sits idle and does not do any work.
- In Multiprogramming system, CPU will never be idle and keeps on processing.

Time Sharing Systems are very similar to Multiprogramming batch systems. In fact time sharing systems are an extension of multiprogramming systems.

In Time sharing systems the prime focus is on **minimizing the response time**, while in multiprogramming the prime focus is to maximize the CPU usage.



3) Multiprocessor Systems

A Multiprocessor system consists of several processors that share a common physical memory. Multiprocessor system provides higher computing power and speed. In multiprocessor system all processors operate under single operating system. Multiplicity of the processors and how they do act together are transparent to the others.

Advantages of Multiprocessor Systems

1. Enhanced performance
2. Execution of several tasks by different processors concurrently, increases the system's throughput without speeding up the execution of a single task.
3. If possible, system divides task into many subtasks and then these subtasks can be executed in parallel in different processors. Thereby speeding up the execution of single tasks.

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4) Desktop Systems

Earlier, CPUs and PCs lacked the features needed to protect an operating system from user programs. PC operating systems therefore were neither **multiuser** nor **multitasking**. However, the goals of these operating systems have changed with time; instead of maximizing CPU and peripheral utilization, the systems opt for maximizing user convenience and responsiveness. These systems are called **Desktop Systems** and include PCs running `Microsoft Windows` and the `Apple Macintosh`. Operating systems for these computers have benefited in several ways from the development of operating systems for **mainframes**.

Microcomputers were immediately able to adopt some of the technology developed for larger operating systems. On the other hand, the hardware costs for microcomputers are sufficiently **low** that individuals have sole use of the computer, and CPU utilization is no longer a prime concern. Thus, some of the design decisions made in operating systems for mainframes may not be appropriate for smaller systems.

5) Distributed Operating System

The motivation behind developing distributed operating systems is the availability of powerful and inexpensive microprocessors and advances in communication technology.

These advancements in technology have made it possible to design and develop distributed systems comprising of many computers that are inter connected by communication networks. The main benefit of distributed systems is its low price/performance ratio.

Advantages Distributed Operating System

1. As there are multiple systems involved, user at one site can utilize the resources of systems at other sites for resource-intensive tasks.
2. Fast processing.
3. Less load on the Host Machine.

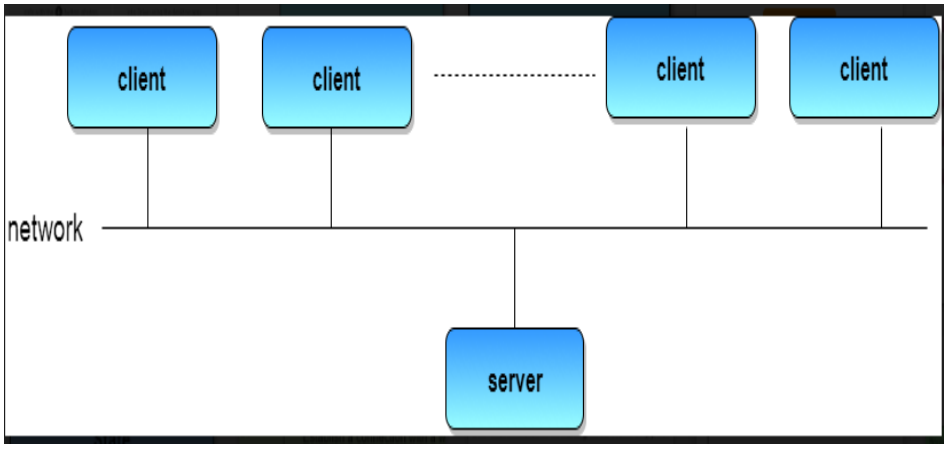
Types of Distributed Operating Systems

Following are the two types of distributed operating systems used:

1. Client-Server Systems
2. Peer-to-Peer Systems

Client-Server Systems

Centralized systems today act as **server systems** to satisfy requests generated by **client systems**. The general structure of a client-server system is depicted in the figure below:



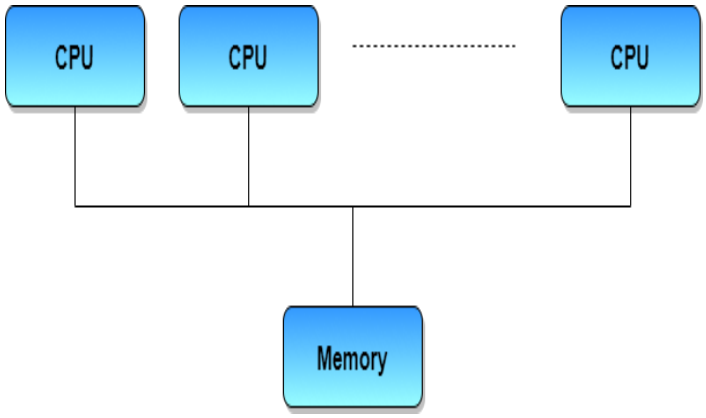
Server Systems can be broadly categorized as: **Compute Servers** and **File Servers**.

- **Compute Server systems**, provide an interface to which clients can send requests to perform an action, in response to which they execute the action and send back results to the client.
- **File Server systems**, provide a file-system interface where clients can create, update, read, and delete files.

Peer-to-Peer Systems

The growth of computer networks - especially the Internet and World Wide Web (WWW) – has had a profound influence on the recent development of operating systems. When PCs were introduced in the 1970s, they were designed for **personal** use and were generally considered standalone computers. With the beginning of widespread public use of the Internet in the 1990s for electronic mail and FTP, many PCs became connected to computer networks.

In contrast to the **Tightly Coupled** systems, the computer networks used in these applications consist of a collection of processors that do not share memory or a clock. Instead, each processor has its own local memory. The processors communicate with one another through various communication lines, such as high-speed buses or telephone lines. These systems are usually referred to as loosely coupled systems (or distributed systems). The general structure of a client-server system is depicted in the figure below:



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6) Clustered Systems

- Like parallel systems, clustered systems gather together multiple CPUs to accomplish computational work.
- Clustered systems differ from parallel systems, however, in that they are composed of two or more individual systems coupled together.
- The definition of the term clustered is **not concrete;** the general accepted definition is that clustered computers share storage and are closely linked via LAN networking.
- Clustering is usually performed to provide **high availability**.

- A layer of cluster software runs on the cluster nodes. Each node can monitor one or more of the others. If the monitored machine fails, the monitoring machine can take ownership of its storage, and restart the application(s) that were running on the failed machine. The failed machine can remain down, but the users and clients of the application would only see a brief interruption of service.
- **Asymmetric Clustering** - In this, one machine is in hot standby mode while the other is running the applications. The hot standby host (machine) does nothing but monitor the active server. If that server fails, the hot standby host becomes the active server.
- **Symmetric Clustering** - In this, two or more hosts are running applications, and they are monitoring each other. This mode is obviously more efficient, as it uses all of the available hardware.
- **Parallel Clustering** - Parallel clusters allow multiple hosts to access the same data on the shared storage. Because most operating systems lack support for this simultaneous data access by multiple hosts, parallel clusters are usually accomplished by special versions of software and special releases of applications.

Clustered technology is rapidly changing. Clustered system's usage and it's features should expand greatly as **Storage Area Networks(SANs)**. SANs allow easy attachment of multiple hosts to multiple storage units. Current clusters are usually limited to two or four hosts due to the complexity of connecting the hosts to shared storage.

7) Real Time Operating System

It is defined as an operating system known to give maximum time for each of the critical operations that it performs, like OS calls and interrupt handling.

The Real-Time Operating system which guarantees the maximum time for critical operations and complete them on time are referred to as **Hard Real-Time Operating Systems.**

While the real-time operating systems that can only guarantee a maximum of the time, i.e. the critical task will get priority over other tasks, but no assurity of completeing it in a defined time. These systems are referred to as **Soft Real-Time Operating Systems**.

8) Handheld Systems

Handheld systems include **Personal Digital Assistants(PDAs)**, such as `Palm-Pilots` or `Cellular Telephones` with connectivity to a network such as the Internet. They are usually of limited size due to which most handheld devices have a small amount of memory, include slow processors, and feature small display screens.

- Many handheld devices have between **512 KB** and **8 MB** of memory. As a result, the operating system and applications must manage memory efficiently. This includes returning all allocated memory back to the memory manager once the memory is no longer being used.
- Currently, many handheld devices do **not use virtual memory** techniques, thus forcing program developers to work within the confines of limited physical memory.
- Processors for most handheld devices often run at a fraction of the speed of a processor in a PC. Faster processors require **more power**. To include a faster processor in a handheld device would require a **larger battery** that would have to be replaced more frequently.
- The last issue confronting program designers for handheld devices is the small display screens typically available. One approach for displaying the content in web pages is **web clipping**, where only a small subset of a web page is delivered and displayed on the handheld device.

Some handheld devices may use wireless technology such as **BlueTooth**, allowing remote access to e-mail and web browsing. **Cellular telephones** with connectivity to the Internet fall into this category. Their use continues to expand as network connections become more available and other options such as `cameras` and `MP3 players`, expand their utility.

BOOTING PROCESS

When we start our Computer then there is an operation which is performed automatically by the Computer which is also called as Booting. In the Booting, System will check all the hardware's and Software's those are installed or Attached with the System and this will also load all the Files those are needed for running a system.

In the Booting Process all the Files those are Stored into the ROM Chip will also be Loaded for Running the System. In the Booting Process the System will read all the information from the Files those are Stored into the ROM Chip and the ROM chip will read all the instructions those are Stored into these Files. After the Booting of the System this will automatically display all the information on the System. The Instructions those are necessary to Start the System will be read at the Time of Booting.

There are two Types of Booting

1) **Warm Booting**: when the System Starts from the Starting or from initial State Means when we Starts our System this is called as warm Booting. In the Warm Booting the System will be started from

its beginning State means first of all, the user will press the Power Button, then this will read all the instructions from the ROM and the Operating System will b automatically gets loaded into the System.

2) **Cold Booting**: The Cold Booting is that in which System Automatically Starts when we are Running the System, For Example due to Light Fluctuation the system will Automatically Restarts So that in this Chances Damaging of system are More. And the System will no be start from its initial State So May Some Files will b Damaged because they are not Properly Stored into the System.

TRANSLATORS AND LANGUAGES

A program translator is a computer program that performs the translation of a program written in a given programming language into a functionally equivalent program in a different computer language, without losing the functional or logical structure of the original code (the "essence" of each program). These include translations between high-level and human-readable computer languages such as C++, Java and COBOL, intermediate-level languages such as Java bytecode, low-level languages such as the assembly language and machine code, and between similar levels of language on different computing platforms, as well as from any of these to any other of these.

They also include translators between software implementations and hardware/ASIC microchip implementations of the same program, and from software descriptions of a microchip to the logic gates needed to build it.

1. COMPILERS

A compiler is a computer program (or set of programs) that transforms source code written in a programming language (the source language) into another computer language (the target language, often having a binary form known as object code).

The most common reason for converting a source code is to create an executable program.

The name "compiler" is primarily used for programs that translate source code from a high-level programming language to a lower level language (e.g., assembly language or machine code).

If the compiled program can run on a computer whose CPU or operating system is different from the one on which the compiler runs, the compiler is known as a cross-compiler. More generally, compilers are a specific type of translators.

A program that translates from a low level language to a higher level one is a decompiler.

A program that translates between high-level languages is usually called a source-to-source compiler or transpiler.

A language rewriter is usually a program that translates the form of expressions without a change of language.

The term compiler-compiler is sometimes used to refer to a parser generator, a tool often used to help create the lexer and parser.

A compiler is likely to perform many or all of the following operations:

1. Lexical analysis,
2. Preprocessing,
3. Parsing,
4. Semantic analysis (syntax-directed translation),
5. Code generation, and code optimization.

Program faults caused by incorrect compiler behavior can be very difficult to track down and work around; therefore, compiler implementors invest significant effort to ensure compiler correctness.

Compilers enabled the development of programs that are machine-independent.

Before the development of FORTRAN, the first higher-level language, in the 1950s, machine-dependent assembly language was widely used.

While assembly language produces more abstraction than machine code on the same architecture, just as with machine code, it has to be modified or rewritten if the program is to be executed on different computer hardware architecture.

With the advent of high-level programming languages that followed FORTRAN, such as COBOL, C, and BASIC, programmers could write machine-independent source programs. A compiler translates the high-level source programs into target programs in machine languages for the specific hardware. Once the target program is generated, the user can execute the program.

ADVANTAGES OF COMPILER

1. Source code is not included, therefore compiled code is more secure than interpreted code.
2. Tends to produce faster code than interpreting source code.
3. Produces an executable file, and therefore the program can be run without need of the source code.

DISADVANTAGES OF COMPILER

1. Object code needs to be produced before a final executable file, this can be a slow process.
2. The source code must be 100% correct for the executable file to be produced.

2. INTERPRETERS

In computer science, an ***interpreter*** is a computer program that directly executes, i.e. *performs*, instructions written in a programming or scripting language, without previously compiling them into a machine language program.

An *interpreter* is a program that reads in as input a source program, along with data for the program, and translates the source program instruction by instruction.

EXAMPLE

- The Java interpreter `java` translate a `.class` file into code that can be executed natively on the underlying machine.
- The program VirtualPC interprets programs written for the Intel Pentium architecture (IBM-PC clone) for the PowerPC architecture (Macintosh). This enable Macintosh users to run Windows programs on their computer.

An interpreter generally uses one of the following strategies for program execution:

1. parse the source code and perform its behavior directly.
2. translate source code into some efficient intermediate representation and immediately execute this.
3. explicitly execute stored precompiled code made by a compiler which is part of the interpreter system.

APPLICATIONS

1. Interpreters are frequently used to execute command languages, and glue languages since each operator executed in command language is usually an invocation of a complex routine such as an editor or compiler.
2. Self-modifying code can easily be implemented in an interpreted language. This relates to the origins of interpretation in Lisp and artificial intelligence research.
3. Virtualization. Machine code intended for one hardware architecture can be run on another using a virtual machine, which is essentially an interpreter.
4. Sandboxing: An interpreter or virtual machine is not compelled to actually execute all the instructions the source code it is processing. In particular, it can refuse to execute code that violates any security constraints it is operating under.

ADVANTAGES OF INTERPRETER

1. Easier to debug(check errors) than a compiler.
2. Easier to create multi-platform code, as each different platform would have an interpreter to run the same code.
3. Useful for prototyping software and testing basic program logic.

DISADVANTAGES OF INTERPRETER

1. Source code is required for the program to be executed, and this source code can be read making it insecure.
2. Interpreters are generally slower than compiled programs due to the per-line translation method.

3. ASSEMBLERS

An assembler translates assembly language into machine code.

An assembler is a program that creates object code by translating combinations of mnemonics and syntax for operations and addressing modes into their numerical equivalents.

Assembly language

- It consists of mnemonics for machine opcodes so assemblers perform a 1:1 translation from mnemonic to a direct instruction.
- An assembly language (or assembler language) is a low-level programming language for a computer, or other programmable device, in which there is a very strong (generally one-to-one) correspondence between the language and the architecture's machine code instructions.

- Each assembly language is specific to a particular computer architecture, in contrast to most high-level programming languages, which are generally portable across multiple architectures, but require interpreting or compiling.
- Assembly language is converted into executable machine code by a utility program referred to as an assembler; the conversion process is referred to as assembly, or assembling the code.

For example:

`LDA #4` converts to `0001001000100100`

Conversely, one instruction in a high level language will translate to one or more instructions at machine level.

TYPES OF ASSEMBLERS

There are two types of assemblers based on how many passes through the source are needed to produce the executable program.

1. **One-pass assemblers** go through the source code once. Any symbol used before it is defined will require "errata" at the end of the object code (or, at least, no earlier than the point where the symbol is defined) telling the linker or the loader to "go back" and overwrite a placeholder which had been left where the as yet undefined symbol was used.
2. **Multi-pass assemblers** create a table with all symbols and their values in the first passes, then use the table in later passes to generate code.

In both cases, the assembler must be able to determine the size of each instruction on the initial passes in order to calculate the addresses of subsequent symbols.

This means that if the size of an operation referring to an operand defined later depends on the type or distance of the operand, the assembler will make a pessimistic estimate when first encountering the operation, and if necessary pad it with one or more "no-operation" instructions in a later pass or the errata. In an assembler with peephole optimization, addresses may be recalculated between passes to allow replacing pessimistic code with code tailored to the exact distance from the target.

The original reason for the use of one-pass assemblers was speed of assembly – often a second pass would require rewinding and rereading a tape or rereading a deck of cards.

With modern computers this has ceased to be an issue. The advantage of the multi-pass assembler is

that the absence of errata makes the linking process (or the program load if the assembler directly produces executable code) faster.

APPLICATIONS OF ASSEMBLERS

1. Assembly language is typically used in a system's boot code, the low-level code that initializes and tests the system hardware prior to booting the operating system and is often stored inROM. (BIOS on IBM-compatible PC systems and CP/M is an example.)
2. Some compilers translate high-level languages into assembly first before fully compiling, allowing the assembly code to be viewed for debugging and optimization purposes.
3. Relatively low-level languages, such as C, allow the programmer to embed assembly language directly in the source code. Programs using such facilities, such as the Linux kernel, can then construct abstractions using different assembly language on each hardware platform. The system's portable code can then use these processor-specific components through a uniform interface.
4. Assembly language is useful in reverse engineering. Many programs are distributed only in machine code form which is straightforward to translate into assembly language, but more difficult to translate into a higher-level language. Tools such as the Interactive Disassembler make extensive use of disassembly for such a purpose.
5. Assemblers can be used to generate blocks of data, with no high-level language overhead, from formatted and commented source code, to be used by other code.

ADVANTAGES OF ASSEMBLER:

1. Very fast in translating assembly language to machine code as 1 to 1 relationship.
2. Assembly code is often very efficient (and therefore fast) because it is a low level language.
3. Assembly code is fairly easy to understand due to the use of English-like mnemonics.

DISADVANTAGES OF ASSEMBLERS:

1. Assembly language is written for a certain instruction set and/or processor.
2. Assembly tends to be optimised for the hardware it's designed for, meaning it is often incompatible with different hardware.

3. Lots of assembly code is needed to do relatively simple tasks, and complex programs require lots of programming time.

DIFFERENCE BETWEEN COMPILERS INTERPRETERS AND ASSEMBLERS

BASIS	COMPILERS	INTERPRETER	ASSEMBLER
1. DEFINITION	A compiler is a computer program that converts an entire program written in a high-level language (called source code) and translates it into an executable form (called object code).	An interpreter is a computer program that takes source code and converts each line in succession.	Assembler converts assembly languages to machine code than high-level programs languages.
2. INPUT	Compiler Takes Entire program as input	Interpreter Takes Single instruction as input .	Input source program in Assembly Language through an input device.
3. MEMORY REQUIREMENT	Memory Requirement : More(Since Object Code is Generated)	Memory Requirement is Less	
4. ERRORS	Errors are displayed after entire program is checked.	Errors are displayed for every instruction interpreted (if any)	Error messages generated during an assembly may originate from the assembler or from a higher level language such as C (many assemblers are written in C) or from the operating system environment

Computer language and types of Computer Language

Around the world language is a source of communication among human beings. Similarly, in order to communicate with computer user also needs to have a language, that should be understandable by the computers. For the purpose different languages are developed for performing different types of work on the computer.

Mainly there are two types of computer languages:

1) Low Level Computer Languages

These are machine codes or close to it. Computer cannot understand instruction given in high level languages or in English. It can only understand and execute instructions given in the form of machine languages i.e. the binary number 0 and 1.

There are two types of low level computer language.

Machine Language

The lowest and most elementary language and was the first type of programming language to be developed. Mache language is basically the only language which computer can understand. In fact, a manufacturer designs a computer to obey just one language, its machine code, which is represented inside the computer by a string of binary digits (bits) 0 and 1. The symbol 0 stands for the absence of an electric pulse and 1 for the presence of an electric pulse. Since a computer is capable of recognizing electric signals, therefore, it understands machine language.

The set of binary codes which can be recognize by the computer is known as the machine code instruction set. A machine language instruction consists of an operation code one or more operands. The operation code specifies that operation that is to be performed e.g. read, record etc. the operands identify the quantities to be operated on e.g. the numbers to be added or the locations where data are stored. But, it is almost impossible to write programs directly in machine code. For this reason, programs are normally written in assembly or high level languages and then are translated in the machine language by different translators.

Advantages

1. It makes fast and efficient use of the computer
2. It requires no translator to translate the code i.e. directly understood by the computer.

Disadvantages

1. All operation codes have to be remembered
2. All memory addresses have to be remembered
3. It is hard to amend or find errors in a program written in the machine language
4. These languages are machine dependent i.e. a particular machine language can be used on only one type of computer.

Assembly Languages

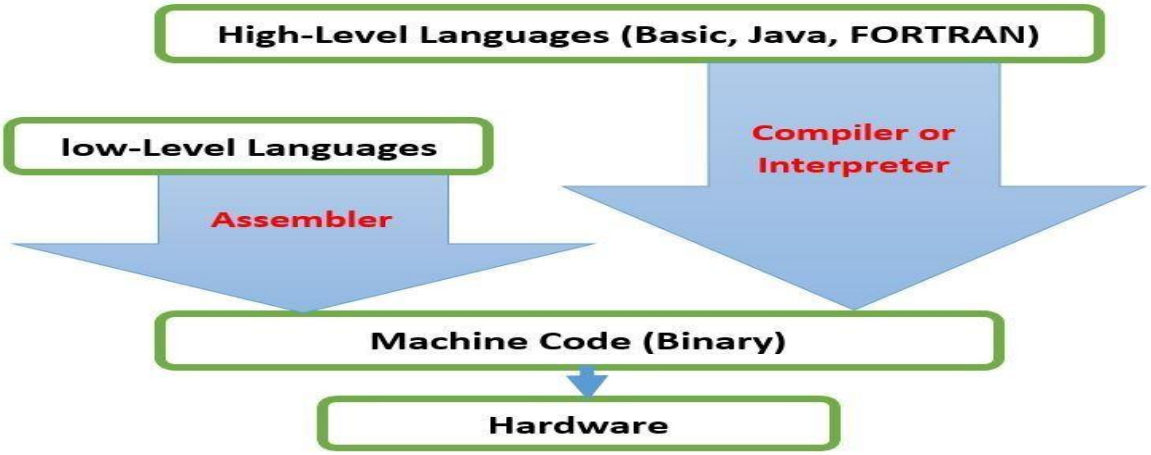
It was developed to overcome some of the many inconveniences of machine language. This is another low level but a very important language in which operation codes and operands are given in the form of alphanumeric symbols instead of 0's and 1's. These alphanumeric symbols will be known as mnemonic codes and can have maximum up to 5 letter combinations e.g. ADD for addition, SUB for subtraction, START LABEL etc. because of this feature it is also known as "Symbolic Programming Language". This language is very difficult and needs a lot of practice to master it because very small English support is given. This symbolic language helps in compiler orientations. The instructions of the assembly language will also be converted to machine codes by language translator to be executed by the computer

Advantages

1. It is easier to understand and use as compared to machine language
2. It is easy to locate and correct errors
3. It is modified easily

Disadvantages

1. Like machine language it is also machine dependent
2. Since it is machine dependent, there programmer should have the knowledge of he hardware also.



2) Computer High Level Languages

High level computer languages give formats close to English language and the purpose of developing high level languages is to enable people to write programs easily and in their own native language environment (English). High-level languages are basically symbolic languages that use English words and/or mathematical symbols rather than mnemonic codes. Each instruction in the high level language is translated into many machine language instructions thus showing one-to-many translation.

- **Problem-Oriented Language:** These are languages used for handling specialized types of data processing problems where programmer only specifies the input/output requirements and other relative information of the problem, that are to be solved. The programmer does not have to specify the procedure to be followed in solving that particular problem.
- **Procedural Language:** These are general purpose languages that are designed to express the logic of a data processing problem.
- **Non-procedural Language:** Computer Programming Languages that allow users and professional programmers to specify the results they want without specifying how to solve the problem.

Selection of a Computer Language

There are many high-level languages in use today. The choice of language depends on type and complexity of the problem.

1. Purpose e.g. business, educational, scientific.
2. Facilities provided e.g. meaningful variable names, control and data structures, error checking facilities.
3. Ease of learning and use.

4. Portability - if a program is to he used on or in more than one system.
5. Popularity - availability of compilers/interpreters.
6. Documentation provided.

Types of High Level Languages

Many languages have been developed for achieving different variety of tasks, some are fairly specialized others are quite general purpose. These are categorized according to their use as:

Algebraic Formula-Type Processing. These languages are oriented towards the computational procedures for solving mathematical and statistical problems. Examples are

1. BASIC (Basic All Purpose Symbolic Instruction Code)
2. FORTRAN (Formula Translation).
3. PL/1 (Programming Language, Version 1).
4. ALGOL (Algorithmic Language).
5. APL (A Programming Language).

Business Data Processing. These languages emphasize their capabilities for maintaining data processing procedures and files handling problems. Examples are:

1. COBOL (Common Business Oriented Language)
2. RPG (Report Program Generator).

String and List Processing. These are used for string manipulation including search for patterns, inserting and deleting characters. Examples are: LISP (List Processing).

Multipurpose Language. A general purpose language used for algebraic procedures, data and string processing. Examples are:

1. Pascal (after the name of Blaise Pascal).
2. PL/1 (Programming Language, version 1).
3. C language.

Simulation: These may be written in algebraic or multipurpose languages. Examples are:

1. SPSS (Statistical Package System Simulator).

2. GPSS (General Purpose System Simulator).

Advantages: Following are the advantages of a high level language:

1. User-friendly (people based)
2. Similar to English with vocabulary of words awl symbols therefore it is easier to learn.
3. They require less time to write
4. They are easier to maintain
5. Problem oriented' rather than 'machine' based
6. Shorter than their low-level equivalents. One statement translates into many machine code instructions.
7. Program written in a high-level equivalent can he translated into many machine language and therefore can run on every computer for which there exists an appropriate translator.
8. It is independent of the machine on which it used i.e. programs developed in high level language can be run on any computer.

Disadvantages: There are certain disadvantages also Inspite these disadvantages high-level languages have proved their worth. The advantages out-weigh the disadvantages by far, for most applications. These are:

1. A high-level language has to be translated into the -machine language by a translator and thus a price in computer time is paid.
2. The object code generated by a translator might be inefficient compared to an equivalent assembly language program.

INTRODUCTION TO GUI

A **graphical user interface** is fondly called "GUI" pronounced "gooey." The word "graphical" means pictures; "user" means the person who uses it; "interface" means what you see on the screen and how you work with it. So a graphical user interface, then, means that you (the user) get to work with little pictures on the screen to boss the computer around, rather than type in lines of codes and commands.

(GUI) An INTERACTIVE outer layer presented by a computer software product (for example an operating system) to make it easier to use by operating through pictures as well as words. Graphical user interfaces employ visual metaphors, in which objects drawn on the computer's screen mimic in

some way the behaviour of real objects, and manipulating the screen object controls part of the program.

A graphical user interface uses *menus* and *icons* (pictorial representations) to choose commands, start applications, make changes to documents, store files, delete files, etc. You can use the mouse to control a cursor or pointer on the screen to do these things, or you can alternatively use the keyboard to do most actions. A graphical user interface is considered *user-friendly.*

The most popular GUI metaphor requires the user to point at pictures on the screen with an arrow pointer steered by a MOUSE or similar input device. Clicking the MOUSE BUTTONS while pointing to a screen object selects or activates that object, and may enable it to be moved across the screen by dragging as if it were a real object.

GUIs have many advantages and some disadvantages. They make programs much easier to learn and use, by exploiting natural hand-to-eye coordination instead of numerous obscure command sequences. They reduce the need for fluent typing skills, and make the operation of software more comprehensible and hence less mysterious and anxiety- prone. For visually-oriented tasks such as word processing, illustration and graphic design they have proved revolutionary.

GUIs can also present great difficulties for people with visual disabilities, and their interactive nature makes it difficult to automate repetitive tasks by batch processing. Neither do GUIs *automatically* promote good user interface design. Hiding 100 poorly-chosen commands behind the tabs of a property sheet is no better than hiding them among an old-fashioned menu hierarchy - the point is to reduce them to 5 more sensible ones.

Historically, the invention of the GUI must be credited to Xerox PARC where the first GUI based workstations - the XEROX STAR and XEROX DORADO - were designed in the early 1970s. These proved too expensive and too radical for commercial exploitation, but it was following a visit to PARC by Steve Jobs in the early 1980s that Apple released the LISA, the first commercial GUI computer, and later the more successful MACINTOSH. It was only following the 1990 release of Windows version 3.0 that GUIs became ubiquitous on IBM-compatible PCs.

UNIT III

INTRODUCTION TO WORD PROCESSOR

Word processing is an application program that allows you to create letters, reports, newsletters, tables,

form letters, brochures, and Web pages. Using this application program you can add pictures, tables, and charts to your documents. You can also check spelling and grammar.

A word processor is an electronic device or computer application software that performs word processing: the composition, editing, formatting and sometimes printing of any sort of written material. Word processing can also refer to advanced shorthand techniques, sometimes used in specialized contexts with a specially modified typewriter. The term was coined at IBM's Böblingen, West Germany Laboratory in the 1960s. Typical features of a word processor include font application, spell checking, grammar checking, a built-in thesaurus, automatic text correction, Web integration and HTML exporting, among others.

The word processor emerged as a stand-alone office machine in the 1970s and 1980s, combining the keyboard text-entry and printing functions of an electric typewriter with a
dedicated computer processor for the editing of text. Although features and designs varied among manufacturers and models, and new features were added as technology advanced, word processors typically featured a monochrome display and the ability to save documents on memory cards or diskettes. Later models introduced innovations such as spell-checking programs, improved formatting options, and dot-matrix printing. As the more versatile combination of personal computers and printers became commonplace, and computer software applications for word processing became popular, most business machine companies stopped manufacturing word processor machines. As of 2009 there were only two U.S. companies, Classic and Alpha Smart, which still made them. Many older machines, however, remain in use. Since 2009, Sentinel has offered a machine described as a "word processor", but it is more accurately a highly specialized microcomputer used for accounting and publishing.

Word processors are descended from early text formatting tools (sometimes called "text justification" tools, from their only real capability). Word processing was one of the earliest applications for the personal computer in office productivity. Although early processors take advantage of a graphical user interface providing some form of what you-see-is-what-you-get editing. Most are powerful systems consisting of one or more programs that can produce any arbitrary combination of images, graphics and text, the latter handled with type-setting capability.

Microsoft Word is the most widely used word processing software. Microsoft estimates that over

500,000,000 people use the Microsoft Office suite, which includes Word. Many other word processing applications exist, including WordPerfect (which dominated the market from the mid-1980s to early-1990s on computers running Microsoft's MS-DOS operating system) and open source applications OpenOffice.org Writer, Libre Office Writer, Abi Word, KWord, and LyX. Web-based word processors, such as Office Web Apps or Google Docs, are a relatively new category.

Main features of word processing applications:

- Create professional documents fast, using built-in and custom templates.
- Easily manage large documents using various features like the ability to create table of contents, index, and cross-references.
- Work on multiple documents simultaneously.
- With the help of mail merge, you can quickly create merge documents like mass mailings or mailing labels.
- AutoCorrect and AutoFormat features catch typographical errors automatically and allow you to use predefined shortcuts and typing patterns to quickly format your documents.
- The print zoom facility scales a document on different paper sizes, and allows you to print out multiple pages on a single sheet of paper.
- The nested tables feature supports putting one table inside another table.
- Export and save your word documents in PDF and XPS file format.
- Batch mailings using form letter template and an address database (also called mail merging);
- Indices of keywords and their page numbers;
- Tables of contents with section titles and their page numbers;
- Tables of figures with caption titles and their page numbers;
- Cross-referencing with section or page numbers;
- Footnote numbering;
- New versions of a document using variables (e.g. model numbers, product names, etc.)

Other word processing functions include spell checking (actually checks against wordlists), "grammar checking" (checks for what seem to be simple grammar errors), and a "thesaurus" function (finds words with similar or opposite meanings). Other common features include collaborative editing, comments and annotations, support for images and diagrams and internal cross-referencing.

Features of word:

MS Word has useful features and tools introduced to produce professionally created documents. You can easily create, format, edit professional-looking user document using comprehensive set of easy to use tools provided by MS Word. It uses the MS Office Fluent user Interface concept. This interface uses a new component called Ribbon to group the tools by task, within task by sub tasks and related commands that are used more frequently. The new user result oriented interface presents the tools to you in a more organised and efficient manner, which are easy to locate.

1. Tabs are more task oriented such as Home, Insert, Page Layout
2. Within each tab, the related sub-tasks are grouped together
3. Related command buttons are also grouped together to execute a command or to display a command menu

Microsoft Office Word helps you produce professional-looking documents by providing a comprehensive set of tools for creating and formatting your document in a new interface. Rich review, commenting, and comparison capabilities help you quickly gather and manage feedback from colleagues. Advanced data integration ensures that documents stay connected to important sources of business information.

The MS Word 2007 provides a lot of pre-formatted template to produce documents, reports etc. While using the pre-formatted template, you can select already available cover page, header and footer to give the documents a professional look without spending much time in formatting a new one. MS Word 2007 also provides features for creating chart and diagram which include three-dimensional shapes, transparency, drop shadows, and other effects. This helps create highly professional documents with flexibility in representing data more efficiently and professionally. Before sharing a document which is in its final form with others, you can use MS Word 2007 “Mark As Final” features to protect the document from any changes. “Mark as Final” command makes the document “read-only” making the typing, editing and proofing command disabled. MS Word 2007 also provides the feature and tools to export your document to either PDF (Portable Document Format) or XPS (XML Paper Specification) format.

ADVANTAGES OF WORD PROCESSING

The advantages of Word processing are synonymous with the benefits provided MS-Word. The most prominent ones are enlisted below:

Create professional-looking documents

Office Word 2007 provides editing and reviewing tools for creating polished documents more easily than ever before.

Spend more time writing, less time formatting

A new, results-oriented interface presents tools to you when you need them, in a clear and organized fashion:

- Save time and get more out of the powerful Word capabilities by selecting from galleries of predefined styles, table formats, list formats, graphical effects, and more.
- Word eliminates the guesswork when you apply formatting to your document. The galleries of formatting choices give you a live visual preview of the formatting in your document before you commit to making a change.

Add preformatted elements with just a few clicks

Office Word 2007 introduces building blocks for adding preformatted content to your documents:

- When you are working on a document from a particular template type, such as a report, you can select from a gallery of preformatted cover pages, pull quotes, and headers and footers to make your document look more polished.
- If you want to customize the preformatted content, or if your organization often uses the same piece of content, such as legal disclaimer text or customer contact information, you can create your own building blocks that you select from the gallery with a single click.

Communicate more effectively with high-impact graphics

New charting and diagramming features include three-dimensional shapes, transparency, drop shadows, and other effects.

Instantly apply a new look and feel to your documents

When your company updates its look, you can instantly follow suit in your documents. By using Quick Styles and Document Themes, you can quickly change the appearance of text, tables, and graphics throughout your document to match your preferred style or color scheme.

Easily avoid spelling errors

The following are some new features of the spelling checker:

- The spelling checker has been made more consistent across the 2007 Microsoft Office system programs. Examples of this change include:
- Several spelling checker options are now global. If you change one of these options in one Office program, that option is also changed for all the other Office programs.
- In addition to sharing the same custom dictionaries, all programs can manage them using the same dialog box. The 2007 Microsoft Office system spelling checker includes the post-reform French dictionary. In Microsoft Office 2003, this was an add-in that had to be separately installed.
- An exclusion dictionary is automatically created for a language the first time that language is used. Exclusion dictionaries let you force the spelling checker flag words you want to avoid using. They are handy for avoiding words that are obscene or that don't match your style guide
- The spelling checker can find and flag some contextual spelling errors. Have you ever typed a mistake similar to the following? I will see you their. In Office Word 2007, you can enable the Use contextual spelling option to get help with finding and fixing this type of mistake. This option is available when checking the spelling of documents in English, German or Spanish.
- You can disable spelling and grammar checking for a document or for all documents you create.

Share documents confidently

When you send a draft of a document to your colleagues for their input, Office Word 2007 helps you efficiently collect and manage their revisions and comments. When you are ready to publish the document, Office Word 2007 helps you ensure that any unresolved revisions and comments aren't still lurking in the published document.

Quickly compare two versions of a document

Office Word 2007 makes it easy to find out what changes were made to a document. When you compare and combine documents, you can see both versions of the document — with the deleted, inserted, and moved text clearly marked in a third version of the document.

Find and remove hidden metadata and personal information in documents

Before you share your document with other people, you can use the Document Inspector to check the document for hidden metadata, personal information, or content that may be stored in the document. The Document Inspector can find and remove information like comments, versions, tracked changes, ink annotations, document properties, document management server information, hidden text, custom XML data, and information in headers and footers. The Document Inspector can help you ensure that the documents you share with other people do not contain any hidden personal information or any hidden content that your organization might not want distributed. Additionally, your organization can customize the Document Inspector to add checks for additional types of hidden content.

Add a digital signature or signature line to your documents

You can help provide assurance as to the authenticity, integrity, and origin of your document by adding a digital signature to the document. In Office Word 2007 you can either add an invisible digital signature to a document, or you can insert a Microsoft Office Signature Line to capture a visible representation of a signature along with a digital signature.

The ability to capture digital signatures by using signature lines in Office documents makes it possible for organizations to use paperless signing processes for documents like contracts or other agreements. Unlike signatures on paper, digital signatures provide a record of exactly what was signed and they allow the signature to be verified in the future.

Convert your Word documents to PDF or XPS

Office Word 2007 supports exporting your file to the following formats:

- **Portable Document Format (PDF)** PDF is a fixed-layout electronic file format that preserves document formatting and enables file sharing. The PDF format ensures that when the file is viewed online or printed, it retains exactly the format that you intended, and that data in the file cannot be easily changed. The PDF format is also useful for documents that will be reproduced by using commercial printing methods

.

- **XML Paper Specification (XPS)** XPS is an electronic file format that preserves document formatting and enables file sharing. The XPS format ensures that when the file is viewed online or printed, it retains exactly the format that you intended, and that data in the file cannot be easily changed.

Instantly detect documents that contain embedded macros

Office Word 2007 uses a separate file format (.docm) for macro-enabled documents, so you can instantly tell whether a file is capable of running any embedded macros.

Prevent changes to a final version of a document

Before you share a final version of a document with other people, you can use the **Mark As Final** command to make the document read-only and communicate to other people that you are sharing a final version of the document. When a document is marked as final, typing, editing commands, and proofing marks are disabled, and people who view the document cannot inadvertently change the document. The **Mark As Final** command is not a security feature. Anyone can edit a document that is marked as final by turning off **Mark As Final**.

Reduce file sizes and improve corruption recovery

The new Word XML format is a compressed, segmented file format that offers a dramatic reduction in file size and helps ensure that damaged or corrupted files can be easily recovered.

Connect your documents to business information

In your business, you create documents to communicate important business data. You can save time and reduce the risk of error by automating the process of this communication. Create dynamic smart documents that update themselves by using new document controls and data binding to connect to your back-end systems.

Manage document properties in the Document Information Panel

The Document Information Panel makes it easy to view and edit document properties while you work on your Word document. The Document Information Panel displays at the top of your document in Word. You can use the Document Information Panel to view and edit both standard Microsoft Office

document properties and properties for files that are saved to a document management server. If you use the Document Information Panel to edit the document properties for a server document, the updated properties will be saved directly to the server.

For example, you may have a server that keeps track of a document's editorial status. When you put the finishing touches on a document, you can open the Document Information Panel to change the document's editorial status from Draft to Final. When you save the document back on the server, the change in editorial status is updated on the server.

If you store document templates in a library on a Microsoft Windows SharePoint Services 3.0 server, the library might include custom properties that store information about the templates. For example, your organization may require you to categorize documents in the library by filling in a Category property. Using the Document Information Panel, you can edit properties like this directly within the Word environment.

Recover from computer problems

2007 Microsoft Office system provides improved tools for recovering your work in the event of a problem in Office Word 2007.

Office Diagnostics: Microsoft Office Diagnostics is a series of diagnostic tests that can help you to discover why your computer is crashing. The diagnostic tests can solve some problems directly and may identify ways that you can solve other problems. Microsoft Office Diagnostics replaces the following Microsoft Office 2003 features: Detect and Repair and Microsoft Office Application Recovery.

Program recovery: Office Word 2007 has improved capabilities to help avoid losing work when the program closes abnormally. Whenever possible, Word tries to recover some aspects of the state of the program after it restarts. For example, you are working on several files at the same time. Each file is open in a different window with specific data visible in each window. Word crashes. When you restart Word, it opens the files and restores the windows to the way they were before Word crashed.

THE WORD SCREEN LAYOUT

The Word screen (Window) contains a number of objects such as Tabs, Menus, Sub menus, short-cut commands etc.

ADVANCED EXCEL

Excel is a software application of almost unlimited depth and complexity. There is no way to count the number of features it offers, but they must run into the thousands, if not tens of thousands. Fortunately, most business analysts do not need to become experts in all aspects of Excel, but they often find that they need to develop expertise in a few specialized domains within Excel. Which domains are relevant depends on the job they perform as well as on their level of interest in Excel and spreadsheet modeling generally.

1) CONTROLS

Excel controls allow the user to change the contents or behaviour of a spreadsheet without interacting directly with individual cells. Controls such as boxes and buttons are familiar because they appear frequently in commonly used windows in the Excel user interface. Among the Excel options, for example, the window for formula options uses a button to select a Workbook Calculation Mode (only one of the three available choices is allowed) and a check box (on or off) to Enable Iterative Calculation.

To place a control on a spreadsheet requires a sequence of steps. First, click on the desired control icon from the toolbar. Using the cursor, which now appears as a cross, drag and drop the control to the desired location in the spreadsheet. In doing so, use the cursor to let the size of the control as well as its location.

	For moving and scrolling
Ctrl +arrow key	Move to the edge of the current data region
Home	Move to the beginning of the row
Ctrl +Home	Move to the beginning of the worksheet (A1)
Ctrl +End	Move to the bottom-right corner of the used area of the worksheet
PgDn	Move down one screen
PgUp	Move up one screen
Alt +PgDn	Move one screen to the right
Alt +PgUp	Move one screen to the left
F5	Display the Go To dialog box
	For entering data on a worksheet
Alt + Enter	Opens a new workbook, if one is already open
Shift + Enter	Complete a cell entry and move up one cell
Tab	Complete a cell entry and move to the right cell
Shift +Tab	Complete a cell entry and move to the left cell
Ctrl + Delete	Delete text to the end of the line
Shift +F2	Edit a cell comment
Ctrl +D	Fill down (a selected column of cells with the content of the first cell)
Ctrl +R	Fill to the right (a selected row of cells with the content of the first cell)
Ctrl +F3	Open the Define Name dialog box
	For working in cells or the formula bar
Ctrl +Shift +Enter	Enter a formula as an array formula
F2	Edit the active cell
F3	Open the Paste Name window
Shift +F3	Open the Insert Function (or Function Arguments) window
F9	Calculate all sheets in all open workbooks
Ctrl + Alt +F9	Calculate all worksheets in the active workbook
Shift + F9	Calculate the active worksheet
Ctrl +; (semicolon)	Enter the current date
Ctrl + Shift + : (colon)	Enter the current time
Ctrl +~	Display all formulas
	For inserting, deleting and copying selection
Ctrl +C	Copy the selection
Ctrl +X	Cut the selection
Ctrl +V	Paste the selection
Delete	Clear the contents of the selection
Ctrl + -(hyphen)	Delete (dialog box)
Ctrl +Z	Undo the last action
Ctrl +Shift + Plus sign	Insert (dialog box)
	For selecting cells, columns or rows
Shift +arrow key	Extend the selection by one cell
Ctrl + Shift +arrow key	Extend the selection to the last nonblank cell in the same column or row
Ctrl +space bar	Select the entire column
Ctrl +A	Select the entire worksheet
	For working with worksheets and macros
Shift +F11	Insert a new worksheet
Alt + F8	Display the Macro dialog box
Alt + F11	Display the Visual Basic Editor (VBE)
Ctrl +PgDn	Move to the next sheet in the workbook
Ctrl + PgUp	Move to the previous sheet in the workbook

	Miscellaneous
Ctrl +S	Save an active workbook
Ctrl +N	Open a new workbook
Ctrl +O	Open an existing workbook
Shift +F5 or Ctrl +F	Display the find dialog box
Ctrl +H	Display the Replace dialog box

UNIT IV

Data Communication

When we communicate, we are sharing information. This sharing can be local or remote. Between individuals, local communication usually occurs face to face, while remote communication takes place over distance. The term **Telecommunication**, which includes Telephony, Telegraphy, and television, means communication at a distance.
The data refers to facts, concepts and instruction presented in whatever form is agreed upon by the parties creating and using the data. In the context of computer information system, data represented by binary information units produced and consumed in the form of 0s and 1s.

Data Communications is the transfer of data or information between a source and a receiver. The source transmits the data and the receiver receives it. The actual generation of the information is not part of Data Communications nor is the resulting action of the information at the receiver. Data Communication is interested in the transfer of data, the method of transfer and the preservation of the data during the transfer process.

The purpose of Data Communications is to provide the rules and regulations that allow computers with different disk operating systems, languages, cabling and locations to share resources. The rules and regulations are called protocols and standards in Data Communications.

For data communication to occur, the communicating devices must be part of a communication system made up of a combination of hardware and software. The effectiveness of a data communication system depends on the three fundamental characteristics:

1. Delivery: The System must deliver data to the correct destination. Data must be received by the intended device or user and only by that device or user

2. Accuracy: The system must deliver data accurately. Data that have been altered in transmission and left uncorrected are rustles

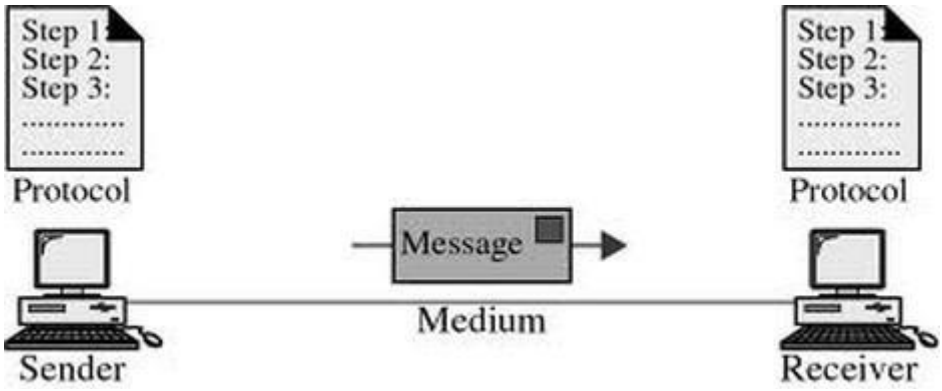
3. Timeliness: The system must deliver data in a timely manner. Data delivered late are useless. In the case of video, audio, and voice data, timely delivery means delivering data as they are produced, in the same order that they are produced, and without significant delay. This kind of delivery id called real-time transmission.

Components

Basic Components of a Communication System

The following are the basic requirements for working of a communication system.

1. The sender (source) who creates the message to be transmitted
2. A medium that carries the message
3. The receiver (sink) who receives the message



Data Communication system components

1. Message: A **message** in its most general meaning is an object of communication. It is a vessel which provides information. Yet, it can also be this information. Therefore, its meaning is dependent upon the context in which it is used; the term may apply to both the information and its form.

2. Sender: The sender will have some kind of meaning she wishes to convey to the receiver. It might not be conscious knowledge, it might be a sub-conscious wish for communication. What is desired to

be communicated would be some kind of idea, perception, feeling, or datum. It will be a part of her reality that she wishes to send to somebody else.

3. Receiver: These messages are delivered to another party. No doubt, you have in mind a desired action or reaction you hope your message prompts from the opposite party. Keep in mind, the other party also enters into the communication process with ideas and feelings that will undoubtedly influence their understanding of your message and their response. To be a successful communicator, you should consider these before delivering your message, then acting appropriately.

4. Medium: Medium is a means used to exchange / transmit the message. The sender must choose an appropriate medium for transmitting the message else the message might not be conveyed to the desired recipients. The choice of appropriate medium of communication is essential for making the message effective and correctly interpreted by the recipient. This choice of communication medium varies depending upon the features of communication. For instance - Written medium is chosen when a message has to be conveyed to a small group of people, while an oral medium is chosen when spontaneous feedback is required from the recipient as misunderstandings are cleared then and there.

5. Protocol: A **protocol** is a formal description of digital message formats and the rules for exchanging those messages in or between computing systems and in telecommunications. Protocols may include signaling, authentication and error detection and correction syntax, semantics, and synchronization of communication and may be implemented in hardware or software, or both.

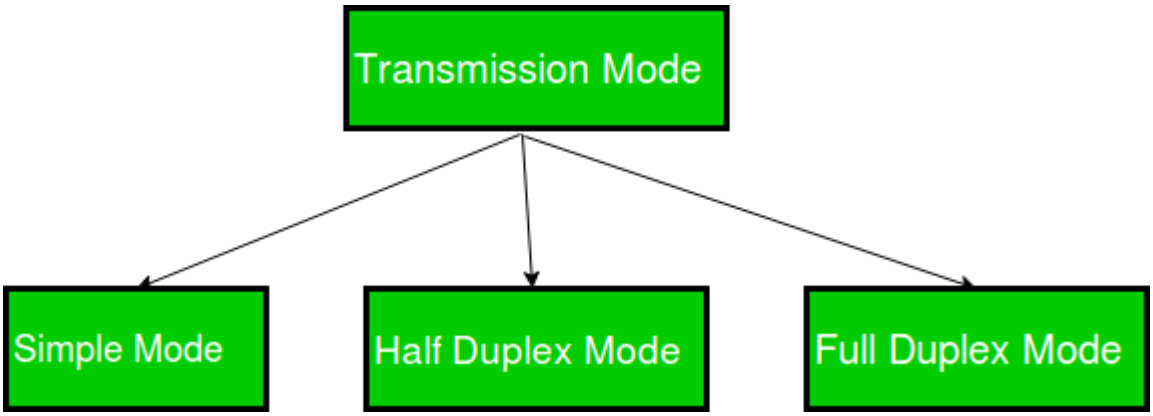
6. Feedback: Feedback is the main component of communication process as it permits the sender to analyze the efficacy of the message. It helps the sender in confirming the correct interpretation of message by the decoder. Feedback may be verbal (through words) or non-verbal (in form of smiles, sighs, etc.). It may take written form also in form of memos, reports, etc.

Transmission Modes in Computer Networks (Simplex, Half-Duplex and Full-Duplex)

Transmission mode means transferring of data between two devices. It is also known as communication mode. Buses and networks are designed to allow communication to occur between individual devices that are interconnected. There are three types of transmission mode:-

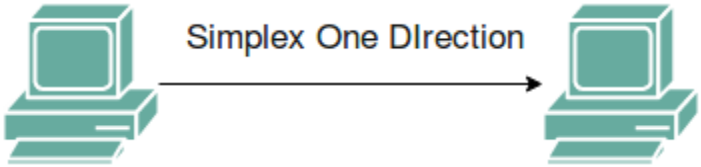
- **Simplex Mode**

- **Half-Duplex Mode**
- **Full-Duplex Mode**



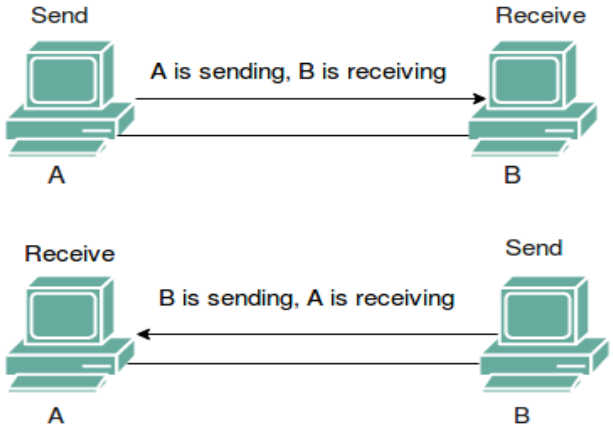
Simplex Mode

In Simplex mode, the communication is unidirectional, as on a one-way street. Only one of the two devices on a link can transmit, the other can only receive. The simplex mode can use the entire capacity of the channel to send data in one direction. Example: Keyboard and traditional monitors. The keyboard can only introduce input, the monitor can only give the output.



Half-Duplex Mode

In half-duplex mode, each station can both transmit and receive, but not at the same time. When one device is sending, the other can only receive, and vice versa. The half-duplex mode is used in cases where there is no need for communication in both direction at the same time. The entire capacity of the channel can be utilized for each direction. Example: Walkie- talkie in which message is sent one at a time and messages are sent in both the directions.

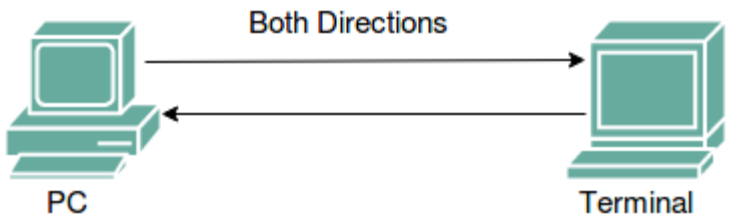


Full-Duplex Mode

In full-duplex mode, both stations can transmit and receive simultaneously. In full_duplex mode, signals going in one direction share the capacity of the link with signals going in other direction, this sharing can occur in two ways:

- Either the link must contain two physically separate transmission paths, one for sending and other for receiving.
- Or the capacity is divided between signals travelling in both directions.

Full-duplex mode is used when communication in both direction is required all the time. The capacity of the channel, however must be divided between the two directions. Example: Telephone Network in which there is communication between two persons by a telephone line, through which both can talk and listen at the same time.



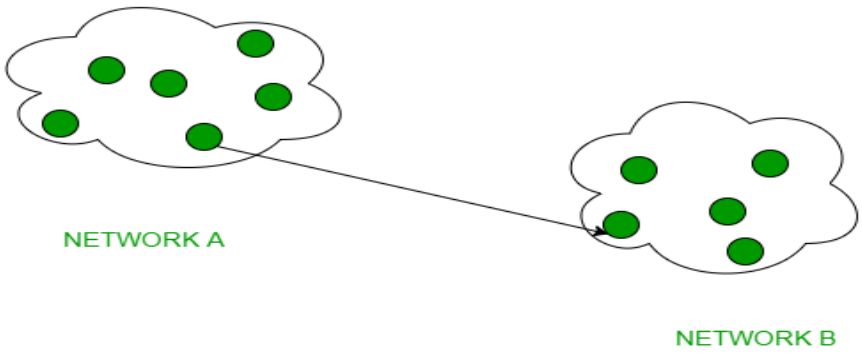
Difference between Unicast, Broadcast and Multicast

The **cast** term here signifies some data(stream of packets) is being transmitted to the recipient(s) from

client(s) side over the communication channel that help them to communicate. Let's see some of the "cast" concepts that are prevailing in the computer networks field.

1. Unicast –

This type of information transfer is useful when there is a participation of single sender and single recipient. So, in short you can term it as a one-to-one transmission. For example, a device having IP address 10.1.2.0 in a network wants to send the traffic stream (data packets) to the device with IP address 20.12.4.2 in the other network, then unicast comes into picture. This is the most common form of data transfer over the networks.



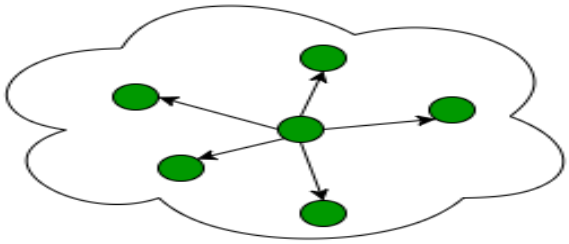
UNICAST EXAMPLE

2. Broadcast –

Broadcasting transfer (one-to-all) techniques can be classified into two types :

- **Limited Broadcasting –**

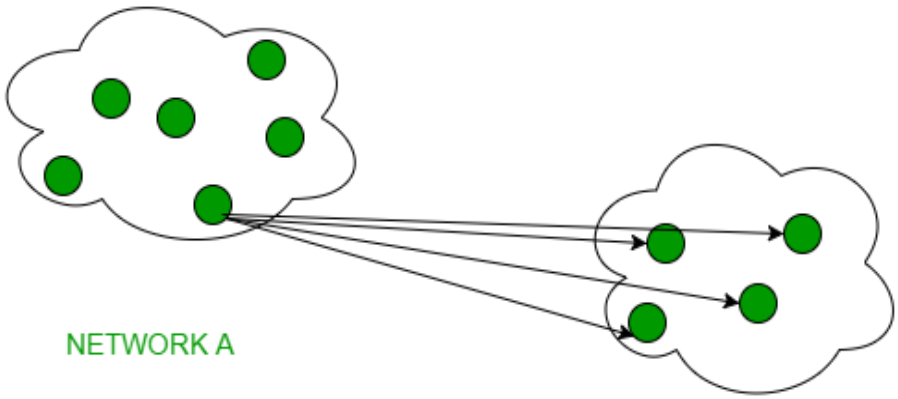
  Suppose you have to send stream of packets to all the devices over the network that you reside, this broadcasting comes handy. For this to achieve,it will append 255.255.255.255 (all the 32 bits of IP address set to 1) called as **Limited Broadcast Address** in the destination address of the datagram (packet) header which is reserved for information tranfer to all the recipients from a single client (sender) over the network.



NETWORK CLUSTER

- **Direct Broadcasting –**

  This is useful when a device in one network wants to transfer packet stream to all the devices over the other network. This is achieved by translating all the Host ID part bits of the destination address to 1,referred as **Direct Broadcast Address** in the datagram header for information transfer.



This mode is mainly utilized by television networks for video and audio distribution. One important protocol of this class in Computer Networks is Address Resolution Protocol (ARP) that is used for resolving IP address into physical address which is necessary for underlying communication.

3. Multicast –

In multicasting, one/more senders and one/more recipients participate in data transfer traffic. In this method traffic recline between the boundaries of unicast (one-to-one) and broadcast (one-to-all). Multicast lets server's direct single copies of data streams that are then simulated and routed to hosts that request it. IP multicast requires support of some other protocols like **IGMP (Internet Group Management Protocol), Multicast routing** for its working. Also in Classful IP addressing **Class D** is reserved for multicast groups.

Network: Network is a communication system which supports many users. Network is a broad term similar to 'system'.

Computer Network: Computer network is a system which allows communication among the computers connected in the network.

Protocol:

- For successful communication to occur, it is not enough for the 'sender' to simply transmit the message and assume that the 'receiver' will receive it properly.
- There are certain rules that must be followed to ensure proper communication.
- A set of such rules is known as a 'protocol' of the data communication system.
- Many different protocols are used in the modern data communication system.
- The interconnection of one station to many stations is called as 'networking'.
- A network is any interconnection of two or more stations that wish to communicate.

Node: Each station in a communication network is called as a node. The nodes are connected in different way to each other to form a network.

Many other forms of interconnection are possible. The most familiar network is the Telephone System. It is the largest and most sophisticated network of all.

Introduction to Computer Networks:

- During 20^{th} century the most important technology has been the information gathering, its processing and distribution.
- The computers and communication have been merged together and their merger has had a profound effect on the manner in which computer systems are organized.

- The old computer in which a single computer used to serve all the computational needs of an organisation has been replaced by a new one in which a large number of separate but interconnected computers do the job.
- Such systems are called as Computer Networks.
- Two systems are said to be interconnected if they interchange information. The connection between the separate computers can be done via a copper wire, fiber optics, microwaves or communication satellite.

Distributed Systems:

- If one computer can forcibly start, stop or control another the computer are not autonomous. A system with one control unit and many slaves, or a large computer with remote printers and terminals is not called a computer network, it is called a Distributed System.
- In distributed system, the existence of multiple autonomous computers is not visible to the user. The user can type a command to run a program and it runs.
- It is up to operating system to select the best processor, find and transport all the input files to that processor and give the results to the user.
- With a computer network, the user must explicitly (definitely) log onto one machine, explicitly submit jobs remotely, explicitly moves files around and generally handle all the network management personally.
- With a distributed system, nothing has to be done explicitly; it is all automatically done by the system without the user's knowledge.
- **Basically, a distributed system is a software system built on top of a network. The software gives it a high degree of cohesiveness (sticking together) and transparency.**

Internet:

The network formed by the co-operative interconnection of a large number of computer networks.

- Network of Networks
- No one owns the Internet
- Every person who makes a connection owns a slice of the Internet.
- There is no central administration of the Internet.

Internet is comprises of:

A community of people: who use and develop the network.

A collection of resources: that can be reached from those networks.

A setup to facilitate collaboration: Among the members of the research and educational communities worldwide.

The connected networks use the TCP/IP protocols:

Important Internet applications:

World wide web(WWW)
File Transfer Protocol(FTP)
Electronic Mail
Internet Relay Chat

Intranet:

A private TCP/IP internetwork within an organization that uses Internet technologies such as Web servers and Web browsers for sharing information and collaborating. Intranets can be used to publish company policies and newsletters, provide sales and marketing staff with product information, provide technical support and tutorials, and just about anything else you can think of that fits within the standard Web server/Web browser environment.

Intranet Web servers differ from public Web servers in that the public must have the proper permissions and passwords to access the intranet of an organization. Intranets are designed to permit users who have access privileges to the internal LAN of the organization. Within an intranet, Web servers are installed in the network. Browser technology is used as the common front end to access information on servers such as financial, graphical, or text-based data.

Extranet:

Extranets refer to applications and services that are Intranet based, and use extended, secure access to external users or enterprises. This access is usually accomplished through passwords, user IDs, and other application level security. An extranet is the extension of two or more intranet strategies with a secure interaction between participant enterprises and their respective intranets.

Part of a Company's Intranet that is extended to users outside the company (eg. Normally over the Internet). In its simplest form, a private TCP/IP network that securely shares information using Hypertext Transfer Protocol (HTTP) and other Internet protocols with business partners such as vendors, suppliers, and wholesale customers. An extranet is thus a corporate intranet that is exposed over the Internet to certain specific groups that need
access to it. Extranets built in this fashion follow the client/server paradigm, with Web servers such as Apache.

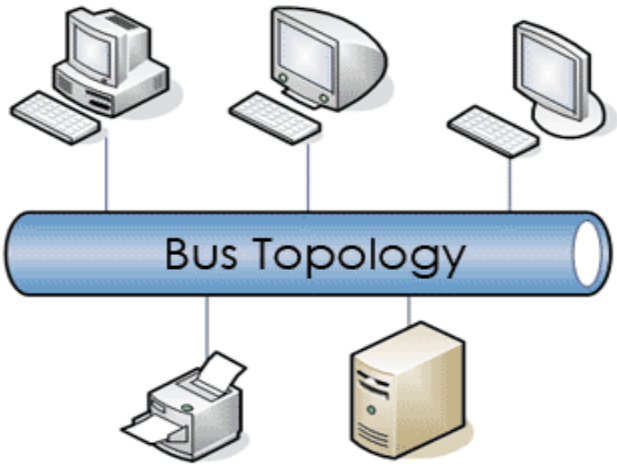
Extranets are a powerful tool because they let businesses share resources on their own private networks over the Internet with suppliers, vendors, business partners, or customers. Extranets are typically used for supporting realtime supply chains, for enabling business partners to work together, or to share information such as catalogs with
customers. The power of the extranet is that it leverages the existing technology of the Internet to increase the power, flexibility, and competitiveness of businesses utilizing well-known and easily used tools such as Web servers and Web browsers. Extranets also save companies money by allowing them to establish business-to business connectivity over the Internet instead of using expensive, dedicated leased lines. Extranets can also save money by reducing phone and fax costs.

Network Topology:

- The meaning of physical topology indicates the way in which a network is physically laid out.
- Two or more devices connect to a link; two or more links form a topology.
- The topology of a network is the geometric representation of the relationship of all the links connecting the devices (or nodes).
- There are five basic network topologies-
    i. Mesh Topology
    ii. Star Topology
    iii. Bus Topology
    iv. Ring Topology
    v. Tree Topology
- While selecting one of the above five topologies we have to consider the relative status of the device to be linked.
- Two relationships on the basis are possible as follows:

- ✓ **Peer to peer:** It is the relationship where the devices share the link equally. The examples are ring and mesh topologies.
- ✓ **Primary-secondary:** It is the relationship in which one device controls and the other devices have to transmit through it. The examples are star and tree topology.

1. Bus Topology



- The bus topology is usually used when a network installation is small, simple or temporary.
- When one computer sends a signal up the cable; all the computers on the network receive the information, but the one with the address that matches the one encoded in the message accepts the information while all the others reject the message.
- The speed of the bus topology is slow because only one computer can send a message at a time. A computer must wait until the bus is free before it can transmit.
- The bus topology requires a proper termination at both the ends of the cable.
- Since the bus is a passive topology, the electrical signal from a transmitting computer is free to travel the entire length of the cable.
- Without termination when the signal reaches the end of the cable, it returns back and travels back up the cable.
- The transmitted waves and reflected waves, if they are in phase add and if they are out of phase cancel.
- Thus adding and cancellation of the wave leads to what is called a standing wave.
- The standing waves can distort the normal signals which are travelling along the cable.

- The terminators absorb the electrical energy and stop reflections.

Characteristics of the bus topology:

- ✓ The signal strength of the transmitted signal should be adequately high so as to meet the minimum signal strength requirements of the receiver.
- ✓ Adequate signal to noise ratio should be maintained.
- ✓ This is a multipoint configuration. There are more than two devices connected to the medium and they are capable of transmitting on the medium. Hence the medium access control is essential for the bus topology.
- ✓ The signal should not be too strong. This is necessary to avoid the overloading of transmitter and hence the possibility of signal distortion.
- ✓ This is called as signal balancing which is not an easy task at all. Specially the signal balancing becomes increasingly difficult with increase in the number of stations.
- ✓ The solution to this problem is to divide the transmission medium into small segments and within each such segment a pair wise balancing is done using amplifiers or repeaters between the segments.

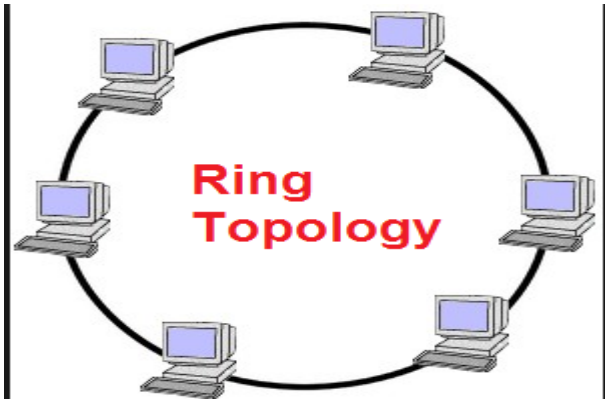
Advantages of bus topology:

- ✓ The bus topology is easy to understand, install and use for small networks.
- ✓ The cabling cost is less as the bus topology requires the least amount of cable to connect the computers.
- ✓ The bus topology is easy to expand by joining two cables with a BNC barrel connector.
- ✓ In the expansion of a bus topology repeaters can be used to boost the signal and increase the distance.

Disadvantages of bus topology:

- ✓ Heavy network traffic slows down the bus speed. In bus topology only one computer can transmit and other have to wait till their turn comes and there is no co-ordination between computers for reservation of transmitting time slot.
- ✓ The BNC connectors used for expansion of the bus attenuates the signal considerably.
- ✓ A cable break or loose BNC connector will cause reflections and bring down the whole network causing all network activity to stop.

2. Ring topology



- In a ring topology, each computer is connected to the next computer, with the last one connected to the first.
- Rings are used in high performance networks where large bandwidth is necessary.
- Every computer is connected to the next computer in the ring and each retransmits what it receives from the previous computer hence the ring is an active network.
- The message flow around the ring in one direction. There is no termination because there is no end to the ring.
- **Some ring networks do token passing. A short message called a token is passed around the ring until a computer wishes to send information to another computer.**
- That computer modifies the token, adds an electronic address and data and sends it around the ring.
- The receiving computer returns a message to the originator indicating that the message has been received.
- The sending computer then creates another token and places it on the network, allowing another station to capture the token and begin transmitting.
- The token circulates until a station is ready to send and capture the token. Faster networks circulate several tokens at once.
- Some ring networks have two counter-rotating rings that help them recover from network faults.

Characteristics of ring LANs:

- The data is transferred in a sequential manner bit by bit around the ring. Each repeater will regenerate and retransmit each bit.

Functions of a ring:

- ✓ A ring can operate as a communication network if it performs the following three functions:

1) Data insertion
2) Data reception
3) Data removal

- ✓ Each repeater also acts as the device attachment point. Hence the function of data insertion is accomplished by the repeaters.
- ✓ Data is transmitted in the form of packets.
- ✓ Each packet consists of a destination address field. As this packet by a repeater, the destination address field is copied by the repeater.
- ✓ If the destination address field corresponds to the address of a device then that repeater copies the remaining contents of packet as well.
- ✓ Data insertion and reception can be done easily by the repeaters but data removal is more difficult on a ring.
- ✓ As the ring is a closed loop, a packet will circulate on it indefinitely if it is not removed.
- ✓ A packet can be removed by the addressed repeater or each packet can be removed by the transmitting repeater itself after the packet has made one trip around the ring.
- ✓ The second approach is more desirable

Problems faced in the ring topology:

- If any link breaks or if any repeater fails then the entire network will be disabled.
- To install a new repeater for supporting a new device, it is necessary to have the identification of two nearby, topologically adjacent repeaters.
- It is necessary to take preventive measures to deal with the time jitter.
- Due to the closed nature of the ring topology it is necessary to remove the circulating packets. These problems except for the last one can be rectified by refinements of the ring topology.

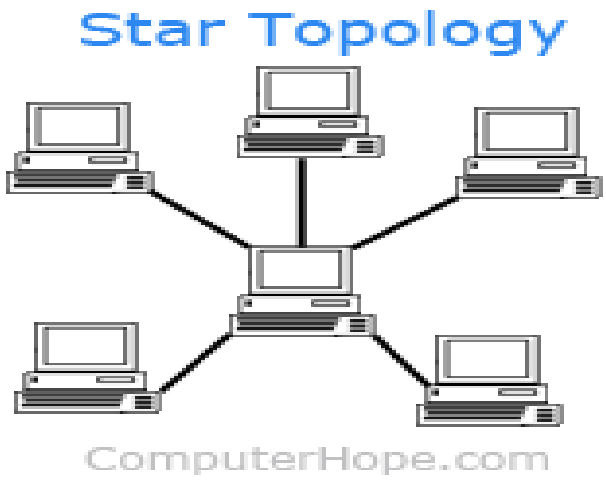
Advantages of ring topology:

- No one computer can monopolise the network because every computer is given equal across to the token.
- The fair sharing of the network allows the network to continue function in a useful, if slower, manner rather than fail once capacity is exceeded as more users are added.

Disadvantages of ring topology:

- Failure of one computer on the ring can affect the whole network.
- It is difficult to trouble short the ring.
- Adding or removing the computers disturbs the network activity.

3. Star topology



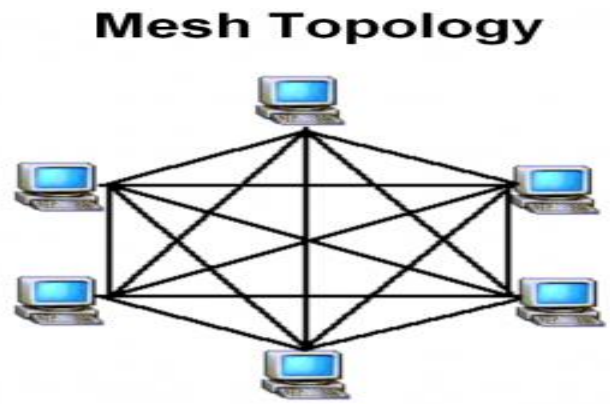
- In a star topology all the cables run from the computers to a central location where they are all connected by a device called a hub.
- Each computer on a star network communicates with a central hub that resends the message either to all the computers in a broadcast star network or only to the destination computer in a switched star network.
- The hub in a broadcast star network can be active or passive. An active hub generates the electrical signal and sends it to all the computers connected to it.
- This type of hub is usually called a multiport repeater. Active hubs require external power supply.

- A passive hub is a wiring panel or punch down block which acts as a connection point. It does not amplify or regenerate the signal. Passive hubs do not require electrical power supply.
- Several types of cables can be used to implement a star network. A hybrid hub can use different types of cable in the same star network.
- A star network can be expanded by placing another star hub.
- This arrangement allows several more computers or hubs to be connected to that hub. This creates a hybrid star network.

Disadvantages of star topology:

- ✓ If the central hub fails, the whole network fails to operate.
- ✓ Many star networks require a device at the central point to rebroadcast or switch the network traffic.
- ✓ The cabling cost is more since cables must be pulled from

4. Mesh Topology



- In a mesh topology every device has a dedicated point-to-point link to every other device.
- The term dedicated means that the link carries traffic only between two devices it connects.
- A fully connected mesh network therefore has n(n-1)/2 physical channels to link n devices.

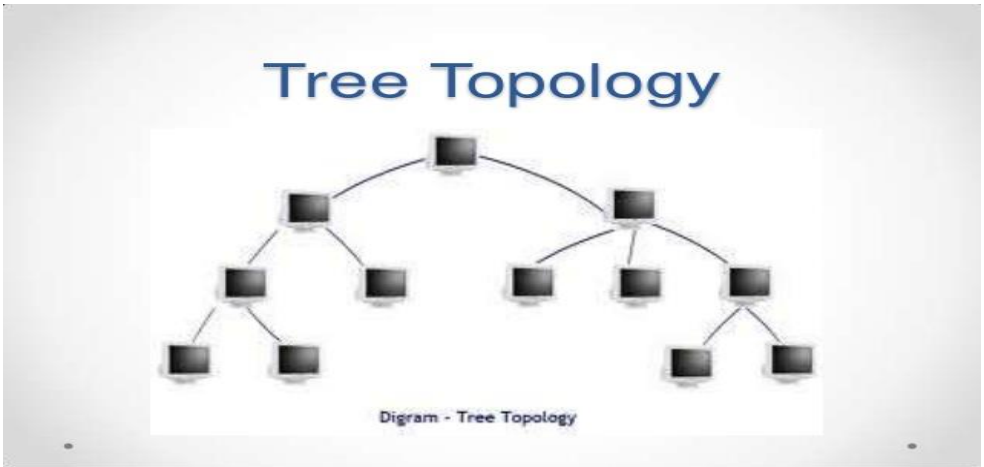
Advantages of mesh topology:

- ✓ The use of dedicated links guarantees that each connection can carry its own data load, thus eliminating traffic problems.
- ✓ A mesh topology is robust because the failure of any one computer does not bring down the entire network.
- ✓ Point to point links make fault diagnose easy.
- ✓ It provides security and privacy because every message sent travels along a dedicated line.

Disadvantages of mesh topology:

- ✓ Cabling cost is more.
- ✓ The hardware required to connect each link input/output and cable is expensive.
- ✓ Since every computer must be connected to every other computer installation and reconfiguration is difficult.

5. Tree topology



- ➢ A tree topology is a variation of a star. As in a star, nodes in a tree are linked to a central hub that controls the traffic to the network.
- ➢ However, not every computer plugs into the central hub, majority of them are connected to a secondary hub which in turn is connected to the central hub.
- ➢ The central hub in the tree is an active hub which contains repeater. The repeater amplifies the signal and increase the distance a signal can travel.

- The secondary hub may be active or passive. A passive hub provides a simple physical connection between the attached devices.

Advantages of tree topology:

- ✓ It allows more devices to be attached to a single hub and can therefore increase the distance of a signal can travel between devices.
- ✓ It allows the network to isolate and prioritise connections from different computers.

Disadvantages of tree topology:

- ✓ If the central hub fails the system breaks down.
- ✓ The cabling cost is more.

Comparison Chart

BASIS FOR COMPARISON	STAR TOPOLOGY	RING TOPOLOGY
Architecture structure	Peripheral nodes are linked to the central device known as a hub.	Every node has two branches connected to a node either side of it.
Amount of cabling required	Larger	Less as compared to star topology
Point of failure	Hub	Every node in the ring
Data traversal	All data passes through the central network connection.	Data moves in only one direction around the ring till it arrives the destination.
Network expansion	A new cable is plugged in from the new node to the hub.	In order to add a new node, a connection must be broken which

BASIS FOR COMPARISON	STAR TOPOLOGY	RING TOPOLOGY
Fault isolation	Easy	Difficult
Troubleshooting	The other nodes are affected only in the case of a hub failure.	When a node goes down the information continues to transfer till the damaged node.
Cost	High	Low

Key Differences between Star and Ring Topology

1. In the star topology, each device is connected to a central node which sends the information received from one device to the other and act as a mediator. On the other hand, in the ring topology, each device has two nodes connected to either side of it, and the last node is connected to the first one.
2. The star topology requires more cable than ring topology.
3. Hub in the star topology is considered as a point of failure because the failure of any device would not affect the whole network, but if hub goes down, no data is transmitted across it. In contrast, each node in the ring topology is considered to be a point of failure as the failure of any device could significantly affect whole ring network.
4. In a star topology, all the data travels through the central hub. As against, in the ring topology, the data passes through each node unidirectionally until it reaches the destination.
5. To add new nodes to the ring network, a cable is used to connect the new device to the hub without influencing the rest of the network. On the contrary, the addition of new devices is done by breaking a connection which results in temporary unserviceable network till the new device is activated.
6. Fault isolation is easier in star topology while it is quite difficult in the ring topology.
7. Troubleshooting in the ring topology is simple, as the information continues to transfer through the rest of ring until reaching the point of failure. Conversely, in the star topology, the other devices are affected only when the connecting device goes down (Hub).
8. Star topology is expensive than the ring because it requires central connecting device usually hub.

Types of area networks – LAN, MAN and WAN

The **Network** allows computers to **connect and communicate** with different computers via any medium. LAN, MAN and WAN are the three major types of the network designed to operate over the area they cover. There are some similarities and dissimilarities between them. One of the major differences is the geographical area they cover, i.e. **LAN** covers the smallest area; **MAN** covers an area larger than LAN and **WAN** comprises the largest of all.
There are other types of Computer Networks also, like :

- PAN (Personal Area Network)
- SAN (Storage Area Network)
- EPN (Enterprise Private Network)
- VPN (Virtual Private Network)

1) **Local Area Network (LAN) –**

   LAN or Local Area Network connects network devices in such a way that personal computer and workstations can share data, tools and programs. The group of computers and devices are connected together by a switch, or stack of switches, using a private addressing scheme as defined by the TCP/IP protocol. Private addresses are unique in relation to other computers on the local network. Routers are found at the boundary of a LAN, connecting them to the larger WAN.

Data transmits at a very fast rate as the number of computers linked are limited. By definition, the connections must be high speed and relatively inexpensive hardware (Such as hubs, network adapters and Ethernet cables). LANs cover smaller geographical area (Size is limited to a few kilometers) and are privately owned. One can use it for an office building, home, hospital, schools, etc. LAN is easy to design and maintain. A Communication medium used for LAN has twisted pair cables and coaxial cables. It covers a short distance, and so the error and noise are minimized.

Early LAN's had data rates in the 4 to 16 Mbps range. Today, speeds are normally 100 or 1000 Mbps. Propagation delay is very short in a LAN. The smallest LAN may only use two computers, while larger LANs can accommodate thousands of computers. A LAN typically relies mostly on wired connections for increased speed and security, but wireless connections can also be part of a LAN. The fault tolerance of a LAN is more and there is less congestion in this network. For example : A bunch of

students playing Counter Strike in the same room (without internet).

2) **Metropolitan Area Network (MAN) –**

MAN or Metropolitan area Network covers a larger area than that of a LAN and smaller area as compared to WAN. It connects two or more computers that are apart but resides in the same or different cities. It covers a large geographical area and may serve as an ISP (Internet Service Provider). MAN is designed for customers who need a high-speed connectivity. Speeds of MAN ranges in terms of Mbps. It's hard to design and maintain a Metropolitan Area Network. The fault tolerance of a MAN is less and also there is more congestion in the network. It is costly and may or may not be owned by a single organization. The data transfer rate and the propagation delay of MAN is moderate. Devices used for transmission of data through MAN are: Modem and Wire/Cable. Examples of a MAN are the part of the telephone company network that can provide a high-speed DSL line to the customer or the cable TV network in a city.

3) **Wide Area Network (WAN) –**

WAN or Wide Area Network is a computer network that extends over a large geographical area, although it might be confined within the bounds of a state or country. A WAN could be a connection of LAN connecting to other LAN's via telephone lines and radio waves and may be limited to an enterprise (a corporation or an organization) or accessible to the public. The technology is high speed and relatively expensive.

There are two types of WAN: **Switched WAN and Point-to-Point WAN**. WAN is difficult to design and maintain. Similar to a MAN, the fault tolerance of a WAN is less and there is more congestion in the network. A Communication medium used for WAN is PSTN or Satellite Link. Due to long distance transmission, the noise and error tend to be more in WAN.

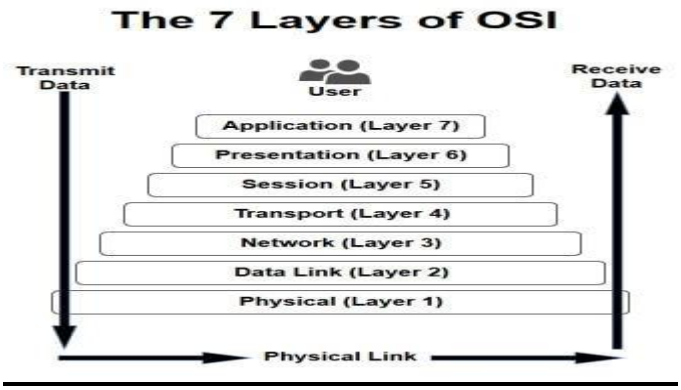
WAN's data rate is slow about a 10th LAN's speed, since it involves increased distance and increased number of servers and terminals etc. Speeds of WAN ranges from few kilobits per second (Kbps) to megabits per second (Mbps). Propagation delay is one of the biggest problems faced here. Devices used for transmission of data through WAN are: Optic wires, Microwaves and Satellites. Example of a Switched WAN is the asynchronous transfer mode (ATM) network and Point-to-Point WAN is dial-up line that connects a home computer to the Internet.

Conclusion

There are many advantages of LAN over MAN and WAN, such as LAN's provide excellent reliability, high data transmission rate, they can easily be managed, and shares peripheral devices too. Local Area Network cannot cover cities or towns and for that Metropolitan Area Network is needed, which can connect city or a group of cities together. Further, for connecting Country or a group of Countries one requires Wide Area Network.

OSI MODEL

- This model is based on a proposal developed by the international standards of organisation in 1983.
- It was revised in 1995.
- The model is called the ISO OSI (open systems interconnection) reference model because it deals with connecting open systems that is, systems that are open for communication with other systems.
- The OSI model has seven layers. The principles that were applied to arrive at the seven layers can be summarized as:
    i. A layer should be created where a different abstraction is needed.
    ii. Each layer should perform a well-defined function.
    iii. The function of each layer should be choosen with an eye toward defining internationally standardized protocols.
    iv. The layer boundaries should be choosen to minimize the information flow across the interfaces.
    v. The number of layers should be large enough that distinct functions need not be thrown together in the same layer out of necessity and small enough that the architecture does not become unwieldy.
- The OSI model itself is not a network architecture because it does not specify the exact services and protocols to be used in each layer. It just tells what each layer should do. However, ISO has also produced standards for all the layers, although these are not part of the reference model itself. Each one has been published as a separate international standard.
- All the applications need not use all the seven layers. The lower three layers are enough for most of the applications. Each layer is built from electronic circuits and/or software and has a separate existence from the remaining layers.
- Each layer is supposed to handle messages or data from the layers which are immediately above or below it.
- This is done by following the protocol rules. Thus each layer takes data from the adjacent layer, handles it according to these rules and then passes the processed data to the next layer on the other side.



LAYERS IN THE OSI MODEL

1) Physical layer:

The physical layer coordinates the functions required to carry a bit stream over a physical medium. It deals with the mechanical and electrical specifications of the interface and transmission medium. It also defines the procedures and functions that physical devices and interfaces have to perform for transmission to occur.

The physical layer is responsible for movements of individual bits from one hop (node) to the next.

Other functions of physical layer are as follows:

a. **Physical characteristics of interfaces and medium:** The physical layer defines the characteristics of the interface between the devices and the transmission medium. It also defines the type of transmission medium.

b. **Representation of bits:** The physical layer data consists of a stream of bits (sequence of 0s or 1s) with no interpretation. To be transmitted, bits must be encoded into signals- electrical or optical. The physical layer defines the type of encoding (how 0s and 1s are changed to signals).

c. **Data rate:** The transmission rate- the number of bits sent each second-is also defined by the physical layer. In other words, the physical layer defines the duration of a bit, which is how long it lasts.

d. **Synchronization of bits:** The sender and receiver not only must use the same bit rate but also must be synchronized at the bit level. In other words, the sender and the receiver clocks must be synchronized.

e. **Line configuration:** The physical layer is concerned with the connection of devices to the media. In a point-to-point configuration, two devices are connected through a dedicated link. In a multipoint configuration, a link is shared among several devices.

f. **Physical topology:** The physical topology defines how devices are connected to make a network. Devices can be connected by using a mesh topology (every device is connected to every other device), a star topology (devices are connected through a central device), a ring topology (each device is connected to the next, forming a ring), a bus topology (every device is on a common link), or a hybrid topology (this is a combination of two or more topologies).

g. **Transmission mode:** The physical layer also defines the direction of transmission between two devices: simplex, half-duplex, or full-duplex. In simplex mode, only one device can send; the

other can only receive. The simplex mode is a one-way communication. In the half-duplex mode, two devices can send and receive, but not at the same time. In a full-duplex mode, two devices can send and receive at the same time.

2) Data link layer:

The data link layer transforms the physical layer, a raw transmission facility, to a reliable link. It makes the physical layer appear error-free to the upper layer (network layer).

The data link layer is responsible for moving frames from one hop (node) to the next.
Other responsibilities of the data link layer include the following:

a. **Framing:** the data link layer divides the stream of bits received from the network layer into manageable data units called frames.
b. **Physical Addressing:** If frames are to be distributed to different systems on the network, the data link layer adds a header to the frame to define the sender and/or receiver of the frame. If the frame is intended for a system outside the sender's network, the receiver address is the address of the device that connects the network to the next one.
c. **Flow control:** If the rate at which the data are absorbed by the receiver is less than the rate at which data are produced in the sender, the data link layer imposes a flow control mechanism to avoid overwhelming the receiver.
d. **Error control:** The data link layer adds reliability to the physical layer by adding mechanisms to detect and retransmit damaged or lost frames. It also uses a mechanism to recognize duplicate frames. Error control is normally achieved through a trailer added to the end of the frame.
e. **Access control:** When two or more devices are connected to the same link, data link layer protocols are necessary to determine which device has control over the link at a given time.

3) Network layer:

The network layer is responsible for the source to destination delivery of a packet, possibly across multiple network (links). Whereas the data link layer oversees the delivery of the packet between two systems on the same network (links), the network layer ensures that each packet gets from its point of origin to its final destination.

If two systems are connected to the same link, there is usually no need for a network layer. However, if the two systems are attached to different networks with connecting devices between the networks, there is often a need for the network layer to accomplish source-to-destination delivery.

The network layer is responsible for the delivery of individual packets from the source host to the destination host.

Other responsibilities of the network layer include:

a. **Logical addressing:** The physical addressing implemented by the data link layer handles the addressing problem locally. If a packet passes the network boundary, we need another addressing system to help distinguish the source and destination systems. The network layer adds a header to the packet coming from the upper layer that, among other things, includes the logical addresses of the sender and receiver.

b. **Routing:** When independent networks or links are connected to create internetworks (network of networks) or a large network, the connecting devices (called routers or switches) route or switch the packets to their final destination. One of the functions of the network layer is to provide this mechanism.

4) Transport layer:

The transport layer is responsible for process-to-process delivery of the entire message. A process is an application program running on a host. Whereas the network layer oversees source-to-destination delivery of individual packets, it does not recognize any relationship between those packets. It treats each one independently, as though each piece belonged to a separate message, whether or not it does.

The transport layer on the other hand, ensures that the whole message arrives intact and in order, overseeing both error control and flow control at the source-to-destination level.

The transport layer is responsible for the delivery of a message from one process to another.

a. **Service-point addressing:** Computers often run several programs at the same time. For this reason, source-to-destination delivery means delivery not only from one computer to the next but also from a specific process (running program) on one computer to a specific process on the other. The transport layer header must therefore include a type of address called a service-point address (or port address). The network layer gets each packet to the correct computer; the transport layer gets the entire message to the correct process on that computer.

b. **Segmentation and reassembly:** A message is divided into transmittable segments, with each segment containing a sequence number. These numbers enable the transport layer to reassemble the message correctly upon arriving at the destination and to identify and replace packets that were lost in transmission.

c. **Connection control:** The transport layer can be either connectionless or connection-oriented. A connectionless transport layer treats each segment as an independent packet and delivers it to the transport layer at the destination machine. A connection-oriented transport layer makes a connection with the transport layer at the destination machine first before delivering the packets. After all the data are transferred, the connection is terminated.

d. **Flow control:** Like the data link layer, the transport layer is responsible for flow control. However, flow control at this layer is performed end to end rather than across a single link.

e. **Error control**: Error control at this layer is performed process-to-process rather than across a single link. The sending transport layer makes sure that the entire message arrives at the receiving transport layer without error (damage, loss or duplication). Error correction is usually achieved through retransmission.

5) Session layer:

The services provided by the first three layers (physical, data link, and network) are not sufficient for some processes. The session layer is the network dialog controller. It establishes, maintains, and synchronizes the interaction among communicating systems.

a. **Dialog control:** The session layer allows two systems to enter into a dialog. It allows the communication between two processes to take place in either half-duplex (one way at a time) or full-duplex (two ways at a time) mode.

b. **Synchronization:** The session layer allows a process to add checkpoints, or synchronization points, to a stream of data. For example, if a system is sending a file of 2000 pages, it is advisable to insert checkpoints after every 100 pages to ensure that each 100-page unit is received and acknowledged independently. In this case, if a crash happens during the transmission of page 523, the only pages that need to be resent after system recovery are pages 501 to 523. Pages previous to 501 need not be resent.

6) Presentation layer:

The presentation layer is concerned with the syntax and semantics of the information exchanged between two systems. **The presentation layer is responsible for translation, compression, and encryption.** Specific responsibilities of the presentation layer include the following:

a. **Translation:** The processes in two systems are usually exchanging information in the form of character strings, numbers and so on. The information must be changed to bit streams before being transmitted. Because different computers use different encoding systems, the presentation layer is responsible for interoperability between these different encoding methods. The presentation layer at the sender changes the information from its sender-dependent format into a common format. The presentation layer at the receiving machine changes the common format into its receiver-dependent format.

b. **Encryption:** To carry sensitive information, a system must be able to ensure privacy. Encryption means that the sender transforms the original information to another form and sends the resulting message out over the network. Decryption reverses the original process to transform the message back to its original form.

c. **Compression:** Data compression reduces the number of bits contained in the information. Data compression becomes particularly important in the transmission of multimedia such as text, audio, and video.

7) Application layer:

The application layer enables the user, whether human or software, to access the network. It provides user interfaces and support for services such as electronic mail, remote file access and transfer, shared database management, and other types of distributed information services.

a. **Network virtual termination:** A network virtual terminal is a software version of a physical terminal, and it allows a user to log on to a remote host. To do so, the application creates a software emulation of a terminal at the remote host. The user's computer talks to the software terminal which, in turn, talks to the host, and vice versa. The remote host believes it is communicating with one of its own terminals and allows the user to log on.

b. **File transfer, access, and management:** This application allows a user to access files in a remote host (to make changes or read data), to retrieve files from a remote computer for use in the local computer, and to manage or control files in a remote computer locally.

c. **Mail services:** This application provides the basis for e-mail forwarding and storage.

d. **Directory services:** This application provides distributed database sources and access for global information about various objects and services.

Merits of OSI model:

- ✓ It distinguishes very clearly between the services, interfaces and protocols.
- ✓ The protocols in OSI model are better hidden. So they can be easily replaced by new protocols as the technology changes.
- ✓ OSI model is truly a general model.
- ✓ This model supports connection oriented as well as connectionless services.

Demerits of OSI model:

- ✓ Sessions and presentation layers are not of much use.
- ✓ This model was devised before the protocols were invented. So in real life there is a problem of fitting protocol into a model.