DIGITAL NOTES
ON
MANAGEMENT SCIENCE

B.TECH III YEAR - I SEM
(2018-19)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTUH, Hyderabad, Approved by AICTE - Accredited by NBA & NAAC – 'A' Grade - ISO 9001:2015 Certified)
Maisammaguda, Dhulapally (Post Via. Hakimpet), Secunderabad – 500100, Telangana State, INDIA.

Objectives: This course is intended to familiarize the students with the basic knowledge of•
Management related concepts, Organization structures, Control charts, Marketing management, Human
resource management, Project management, Strategic management in order to achieve the positions of
future leaders and managers.

Unit-I
Introduction to Management: Nature of Management, importance functions of Management, Systems
approach to Management, Taylor's scientific Management theory, Fayal's principles of Management,
Maslow's need hierarchy theory, McGregor's Theory X and Theory Y, Hertzberg Two Factor Theory of
Motivation, Leadership Styles, Social responsibilities of Management.

Unit-II
Organization Structures, Control charts and Marketing Management: Line Organization structure,
Line and Staff organization structure, Matrix organization structure, Team Organization structure,
Control charts (**X** chart, R chart, C chart, P chart), EOQ, ABC analysis, Functions of Marketing,
Marketing Mix, Marketing strategies based on PLC.

Unit-III
Human Resource Management: Importance of HRM, HRM Vs PMIR (Personnel Management and
Industrial Relations), Functions of HR Manager: Man power planning, Recruitment, Selection, Training
and Development, Wage and Salary administration, Performance Appraisal, Grievance handling and
welfare administration, Job evaluation, and merit rating.

Unit-IV
Project Management(PERT and CPM): Network analysis, Program Evaluation and Review
Technique(PERT), Critical Path Method (CPM), Identifying Critical path, Probability of completing the
project within given time, Project cost analysis, Project crashing(simple problems).

Unit-V
Strategic Management: Vision, Mission, Goals, Objectives, Policy, Strategy, Programs, Corporate
planning process, Environmental scanning, SWOT analysis, Steps in strategy formulation and
implementation.

TEXT BOOKS:
1. Harold Koontz, Heinz Weihrich, A.R.Aryasri, Principles of Management, TMH, 2010.
2. K.Aswathappa, "Human Resource Management, Text and Cases", TMH, 2011.
3. Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithleshwar Jha: Marketing Management,
13/e, Pearson Education, 2012. B.Tech (Computer Science & Engineering)-R15 Malla Reddy College of
Engineering & Technology 145
4. Dipak Kumar Bhattacharyya, Production and Operations Management, Universities Press, 2012.

REFERENCES:
1. Dilip Kumar Battacharya, Principles of Management, Pearson, 2012.
2. Gary Dessler, "Human Resource Management", 12 Edition, Pearson- 2012.
3. Rajan Saxena: Marketing Management, 4/e, TMH, 2013
4. Aryasri: Management Science, McGraw Hill, 2012

Outcomes:
• Students will know the basic management practices, functional areas of the organization which helps
the students to build up their career in the corporate world

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY

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DEPARTMENT OF INFORMATION TECHNOLOGY

UNIT I

INTRODUCTION TO MANAGEMENT

INTRODUCTION

In the present context, managing has become one of the most important areas of human activity because of increasing role of large and complex organizations in the society. Because of their increasing role, the organizations have attracted the attention of both practitioners and academicians to find out the solutions for business problems.

<u>**Concept**</u>

Defining the term management precisely is not so simple because the term management is used in a variety of ways. Being a new discipline, it has drawn concepts and principles from a number of disciplines such as economics, sociology, psychology, anthropology, and statistics and so on.

Each group of contributors has treated management differently. For example, economists have treated management as a factor of production; sociologists have treated it as a class or group of persons; practitioners have treated it as a process comprising different activities.

<u>**DEFINITION**</u>

―Management is the art of getting things done through and with people in formally organized groups‖ **--- Koontz**

―Management is the art of knowing what you want to do and then seeing that it is done in the best and cheapest way‖ –**F.W. Taylor**

―Management is the art of securing maximum results with minimum effort so as to secure maximum prosperity and happiness for both employer and employee and give the public the best possible service‖ **--- John Mee.**

―Management is the accomplishment of results through the efforts of other people‖ **-- Lawrence**
―Management is simply the process of decision making and control over the action of human beings for the expressed purpose of attaining pre-determined goals‖ – **Stanley V.**

Management is a process involving planning, organizing, staffing, directing and controlling human efforts to achieve stated objectives in an organization. ‖

From the above definitions, the following **features** are identified: -
1) **Organized Activities**: Management is a process of organized activities. Without organized activities, two groups of people cannot be involved in the performance of activities. Where a group of people are involved in working towards a common objective, management comes into existence.
2) **Existence of objectives**: The existence of objectives is a basic criterion of e very human organization because all organizations are deliberate and purposive creation and, therefore, they should have some objectives. Without objectives, it becomes difficult to define the direction where organized group of activities would lead to.

3) **Relationship among resources**: Organized activities meant to achieve common goals are brought about to establish certain relationships about the available resources. Resources include money, machine, material, men and methods. All these resources are made available to those who manage the organization. Managers apply knowledge, experience, principles for getting the

desired results. Thus, the essence of management is integration of various organizational resources.

4) **Working with and through people**: Management involves working with people and getting organizational objectives achieved through them. The idea of working through people is interpreted in terms of assigning and reassigning of activities to subordinates.

5) **Decision Making**: Management process involves decision making at various levels for getting things done through people. Decision making basically involves selecting the most appropriate alternative out of the several. If there is only one alternative, there is no question of decision making.

Nature of Management: - The study and application of management techniques in managing the affairs of the organization have changed its nature over a period of time. The following points will describe the nature of management

1) **Multidisciplinary**: Management has been developed as a separate discipline, but it draws knowledge and concepts from various disciplines like psychology, sociology, anthropology, economics, statistics, operations research etc.,. Management integrates the idea and concepts taken from these disciplines and presents newer concepts which can be put into practice for managing the organizations

2) **Dynamic nature of Principles**: Principle is a fundamental truth which establishes cause and effect relationships of a function. Based on integration and supported by practical evidences, management has framed certain principles. However, these principles are flexible in nature and change with the changes in the environment in which an organization exists.

3) **Relative, Not absolute Principles**: Management principles are relative, not absolute, and they should be applied according to the need of the organization. Each organization may be different from others. The difference may exist because of time, place, socio-cultural factors, etc.

4) **Management: Science or Art**: There is a controversy whether management is science or art.
An **art** is personal skill of business affairs. Art is characterized by practical knowledge, personal creativity and skill. The more one practices an art, the more professional one becomes. Management can be considered as an art because it satisfies all these criterion of an art.
A **science** is a systematized body of knowledge of facts. It can establish cause-and-effect relationships among various factors. It involves basic principles, which are capable of universal application. Management can be considered as science because it satisfies all these criterion of a science.

5) **Management as profession**: Management has been regarded as a Profession by many while many have suggested that it has not achieved the status of a profession.
Profession refers to a vocation or a branch of advanced learning such as engineering or medicine.

6) **Universality of management**: Management is a universal phenomenon. However, management principles are not universally applicable but are to be modified according to the needs of the situation.

Importance of Management

Management has been important to the daily lives of people and to the organizations. The importance of management may be traces with the following.

1) **Effective utilization of Resources**: Management tries to make effective utilization of various resources. The resources are scarce in nature and to meet the demand of the society, their contribution should be more for the general interests of the society.
   Management not only decides in which particular alternative a particular resource should be used, but also takes actions to utilize it in that particular alternative in the best way.
2) **Development of Resources**: Management develops various resources. This is true with human as well as non-human factors. Most of the researchers for resource development are carried on in an organized way and management is involved in these organized activities.
3) **It ensures continuity in the organization**: Continuity is very important in the organizations. Where there are no proper guidelines for decision making continuity can not be guaranteed. It is quite natural that new people join while some others retire or leave the organization. It is only management that keeps the organization continuing.
4) **Integrating various interest groups**: In the organized efforts, there are various interest groups and they put pressure over other groups for maximum share in the combined output. For example, in case of a business organization, there are various pressure groups such as shareholders, employees, govt. etc. these interest groups have pressure on an organization. Management has to balance these pressures from various interest groups.
5) **Stability in the society**: Management provides stability in the society by changing and modifying the resources in accordance with the changing environment of the society. In the modern age, more emphasis is on new inventions for the betterment of human beings. These inventions make old systems and factors mostly obsolete and inefficient. Management provides integration between traditions and new inventions, and safeguards society from the unfavorable impact of these inventions so that continuity in social process is maintained.

SCOPE OF MANAGEMENT: Generally, the scope of management hovers around the following functional areas

1.   production management
2.   Marketing management
3.   financial management
4.   personal management

Production management: Production means creation of utilities by converting raw material into final product by various scientific methods and regulations. It is very important field of management. Various sub-areas of the production department are as follows.

•Plant lay out and location: this area deals with designing of plant layout, decide about the plant location for various products and providing various plant utilities

•Production planning: Managers have to plan about various production policies and production methods.

•Material management: this area deals with purchase, storage, issue and control of the material required for production department.

•Research and Development: this area deals with research and developmental activities of manufacturing department. Refinement in existing product line or develop a new product are the major activities.

•Quality Control: quality control department works for production of quality product by doing various tests which ensure the customer satisfaction.

Marketing management

Marketing management involves distribution of the product to the buyers. It may need number of steps. 3ub areas are as follows

•Advertising: this area deals with advertising of product, introducing new product in market by various means and encourage the customer to buy these products.

•Sales management: sales management deals with fixation of prices, actual transfer of products to the customer after fulfilling certain formalities and after sales services.

•Market research: It involves in collection of data related to product demand and performance by research and analysis of market.

Finance and accounting management

Financial and accounting management deals with managerial activities related to procurement and utilization of fund for business purpose. Its sub areas are as follows

•Financial accounting: It relates to record keeping of various financial transactions, their classification and preparation of financial statements to show the financial position of the organization.

•Management accounting: It deals with analysis and interpretation of financial record so that management can take certain decisions on investment plans, return to investors and dividend policy

•Taxation: this area deals with various direct and indirect taxes which an organization has to pay.

•Costing: costing deals with recording of costs, their classification, and analysis and cost control.

Personnel Management

Personnel management is the phase of management which deals with effective use and control of manpower. Following are the sub areas of personnel management

•Personnel planning: this deals with preparation inventory of available manpower and actual requirement of workers in organization.

•Recruitment and selection: this deals with hiring and employing human being for various positions as required. ;

 •Training and development: training and development deals with process of making the employees more efficient and effective by arranging training programs. It helps in making team of competent employees which work for growth of an organization.

•wage administration: It deals in Job evaluation, merit rating of Jobs and making wage and incentive policy for employees.

•Industrial relation: It deals with maintenance of overall employee relation,

Functions of Management:-

To achieve the organizational objectives managers at all levels of organization should perform different functions. A function is a group of similar activities.

The list of management functions varies from author to author with the number of functions varying from three to eight.

Writers	Management Functions
Henry Fayol	Planning, Organizing, Commanding, Coordinating, Controlling
Luther Gullick	POSDCORD- Planning, Organizing, Staffing, Directing, Coordinating, Reporting, Directing
R. Davis	Planning , Organizing, Controlling
E.F.L. Breech	Planning, Organizing, Motivating, Coordinating, Controlling
Koontz	Planning, Organizing, Staffing, Leading, Controlling

Different authors presented different variations. By combining some of functions, these are broadly grouped into Planning, Organizing, Staffing, Directing, and Controlling.

1) **Planning**: Planning is the conscious determination of future course of action. This involves why an action, what action, how to take action, and when to take action. Thus, planning includes determination of specific objectives, determining projects and programs, setting policies and strategies, setting rules and procedures and preparing budgets.

2) **Organizing**: Organizing is the process of dividing work into convenient tasks or duties, grouping of such duties in the form of positions, grouping of various positions into departments and sections, assigning duties to individual positions, and delegating authority to each positions so that the work is carried out as planned. It is viewed as a bridge connecting the conceptual idea developed in creating and planning to the specific means for accomplishment these ideas.

3) **Staffing**: Staffing involves manning the various positions created by the organizing process. It includes preparing inventory of personal available and identifying the sources of people, selecting people, training and developing them, fixing financial compensation, appraising them periodically etc.

4) **Directing**: when people are available in the organization, they must know what they are expected to do in the organization. Superior managers fulfill this requirement by communicating to subordinates about their expected behavior. Once subordinates are oriented, the superiors have continuous responsibility of guiding and leading them for better work performance and motivating them to work with zeal and enthusiasm. Thus, directing includes communicating, motivating and leading.

5) **Controlling**: Controlling involves identification of actual results, comparison of actual results with expected results as set by planning process, identification of deviations between the two, if any, and taking of corrective action so that actual results match with expected results.

LEVELS OF MANAGEMENT

1.   Top Level of Management

It consists of board of directors, chief executive or managing director. The top management is the ultimate source of authority and it manages goals and policies for an enterprise. It devotes more time on planning and coordinating functions.

The role of the top management can be summarized as follows -

- Top management lays down the objectives and broad policies of the enterprise.
- It issues necessary instructions for preparation of department budgets, procedures, schedules etc.

- It prepares strategic plans & policies for the enterprise.
- It appoints the executive for middle level i.e. departmental managers.
- It controls & coordinates the activities of all the departments.
- It is also responsible for maintaining a contact with the outside world.
- It provides guidance and direction.
- The top management is also responsible towards the shareholders for the performance of the enterprise.

2.   Middle Level of Management

The branch managers and departmental managers constitute middle level. They are responsible to the top management for the functioning of their department. They devote more time to organizational and directional functions. In small organization, there is only one layer of middle level of management but in big enterprises, there may be senior and junior middle level management. Their role can be emphasized as –

- o They execute the plans of the organization in accordance with the policies and directives of the top management.
- o They make plans for the sub-units of the organization.
- o They participate in employment & training of lower level management.
- o They interpret and explain policies from top level management to lower level.
- o They are responsible for coordinating the activities within the division or department.
- o It also sends important reports and other important data to top level management.
- o They evaluate performance of junior managers.
- o They are also responsible for inspiring lower level managers towards better performance

3.   **Lower Level of Management**

Lower level is also known as supervisory / operative level of management. It consists of supervisors, foreman, section officers, superintendent etc. According to *R.C. Davis*, "Supervisory management refers to those executives whose work has to be largely with personal oversight and direction of operative employees". In other words, they are concerned with direction and controlling function of management. Their activities include -

Assigning of jobs and tasks to various workers.
- They guide and instruct workers for day to day activities.
- They are responsible for the quality as well as quantity of production.

- They are also entrusted with the responsibility of maintaining good relation in the organization.
- They communicate workers problems, suggestions, and recommendatory appeals etc to the higher level and higher level goals and objectives to the workers.
- They help to solve the grievances of the workers.
- They supervise & guide the sub-ordinates.
- They are responsible for providing training to the workers.
- They arrange necessary materials, machines, tools etc for getting the things done.
- They prepare periodical reports about the performance of the workers.
- They ensure discipline in the enterprise.
- They motivate workers.
- They are the image builders of the enterprise because they are in direct contact with the workers.

FAYOL'S ADMNISTRATIVE MANAGEMENT

Henry Fayol is a French Industrialist and the father of modern operational management theory. Fayol recognized the following organizational activities.

Organizational Activities: Fayol divided the activities of organization into six groups---
- Technical (related to production)
- Commercial (buying, selling and exchange)
- Financial (search for capital and its optimum use)
- Security (protection of property and person)
- Accounting
- Managerial (planning, organizing, commanding, coordinating and controlling)

Among the above activities Fayol considered managerial activities are the most important for the success of business and he concentrated more on that. His contributions are divided the following categories.
- Qualities of a manager
- General principles of management
- Elements of management

Managerial Qualities and Training: According to Fayol the following arethe list of qualities required in a manager.
- Physical (Health, Vigor and Health)
- Mental (Ability to understand and learn, judgment , mental vigor and capability)
- Moral (energy, firmness, initiative, loyalty, tact etc.,)
- Educational
- Technical (peculiar to the function being performed)
- Experience

GENERAL PRINCIPLES OF MANAGEMENT:

Fayol has given 14 principles of management. He has made distinction between management principles and management elements. While management principles is a fundamental truth and establishes cause effect relationship, elements of management denotes the function performed by a manager.

While giving the management principles, Fayol has emphasized two things.
1. the list of management principles is not exhaustive but suggestive and has discussed only those principles which he followed on most occasions.
2. principles of management are not rigid but flexible

Principles:-

1. **Division of work**: It is helpful to take the advantage of specialization. Here, the work is divided among the members of the group based on the employee's skills and talents. It can be applied at all levels of the organization.
2. **Authority and Responsibility**: Fayol finds authority as a continuation of official and personal factors. Official authority is derived from the manager's position and personal authority is derived from personal qualities such as intelligence, experience, moral worth, past services, etc., Responsibility arises out of assignment of activity. In order to discharge the responsibility properly, there should be parity between authority and responsibility.
3. **Discipline**: All the personal serving in an organization should be disciplined. Discipline is obedience, application, behavior and outward mark of respect shown by employees.

4. **Unity of Command**: Unity of command means that a person should get orders from only one superior. Fayol has considered unity of command as an important aspect in managing an organization. He says that ―should it be violated, authority is undermined, and discipline is in jeopardy, order disturbed, and stability threatened
5. **Unity of Direction:** According to this principle, each group of activities with the same objective must have one head and one plan. It is concerned with functioning of the organization I respect of grouping of activities or planning. Unity of direction provides better coordination among various activities to be undertaken by an organization.
6. **Subordination of individual interest to general interest**: Individual interest must be subordinate to general interest when there is conflict between the two. However factors like ambition, laziness, weakness, etc., tend to reduce the importance of general interest. Therefore, superiors should set an example in fairness and goodness.
7. **Remuneration to Personnel**: Remuneration to employees should be fair and provide maximum possible satisfaction to employees and employers. Fayol did not favor profit sharing plan for workers but advocated it for managers. He was also in favor of non-financial benefits.
8. **Centralization**: Everything which goes to increase the importance of subordinate's role is decentralization; every thing which goes to reduce it is centralization. The degree of centralization or decentralization is determined by the needs of the company.
9. **Scalar Chain**: There should be a scalar chain of authority and of communication ranging from the highest to the lowest. It suggests that each communication going up or coming down must flow through each position in the line of authority. It can be short-circuited only in special circumstances. For this purpose, Fayol has suggested ‗gang plank'
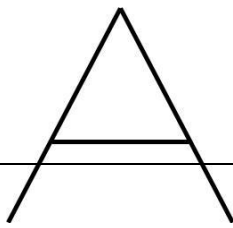
10. **Order:** This is a principle relating to the arrangement of things and people. In material order, there should be a place for everything and everything should be in its place. Similarly, in social order, there should be the right man in the right place.

11. **Equity:** Equity is the combination of justice and kindness. Equity in treatment and behavior is liked by everyone and it brings loyalty in the organization. The application of equity requires good sense, experience and good nature.

12. **Stability of tenure:** No employee should be removed within short time. There should be reasonable security of jobs. Stability of tenure is essential to get an employee accustomed to new work and succeeding in doing it well

13. **Initiative:** Within the limits of authority and discipline, managers should encourage their employees for taking initiative. Initiative is concerned with thinking out and execution of a plan. Initiative increases zeal and energy on the part of human beings.

14. **Esprit de corps:** It is the principle of ‗union is strength'and extension of unity of command for establishing team work. The manager should encourage esprit de corps among his employees.

Hawthorne experiments and human relations:

The human relations approach was born out of a reaction to classical approach. A lot of literature on human relations has been developed. For the first time, an intensive and systematic analysis of human factor in organizations was made in the form of Hawthorne experiments.

To investigate the relationship between productivity and physical working conditions, a team of four members Elton mayo, White head, Roethlisberger and William Dickson was introduced by the company in Hawthorne plant. They conducted various researches in four phases with each phase attempting to answer the question raised at the previous phase. The phases are ---
1. Experiments to determine the effects of changes in illuminations on productivity. Illumination experiments (1924-27)
2. Experiments to determine the effects of changes in hours and other working conditions on productivity. (Relay assembly test room experiments 1927-28)
3. mass interviewing program (1928-1930)
4. determination and analysis of social organization at work (Bank wiring observation room experiments 1931-32)

Conclusions:

☐ Individual workers must be seen as members of a group

- The sense of belongingness and effective management were the two secrets unfolded by the Hawthorne experiments.
- Informal or personal groups influenced the behavior of workers on the job.
- Need for status and belongingness to a group were viewed as more important than monetary incentives or good physical working conditions
- To seek workers cooperation, the management should be aware of their social needs and cater to them. Otherwise, there is every danger that the workers ignore and turn against the interests of the organization.

HERZBERG'S MOTIVATION – HYGIENE THEORY:

Frederick Hertzberg conducted a structured interview program to analyze the experience and feelings of 200 engineers and accountants in nine different companies in Pittsburg area, U.S.A during the structured interview, they were asked to describe a few previous job experiences in which they felt _exceptionally good'or exceptionally bad about jobs.

In his analysis, he found that there are some job conditions which operate primarily to dissatisfy employees when the conditions are absent, however their presence does not motivate them in a strong way. Another set
f job conditions operates primarily to build strong motivation and high job satisfaction, but their absence rarely proves strongly dissatisfying.

The first set of job conditions has been referred to as maintenance or hygiene factors and second set of job conditions as motivational factors.

Hygiene Factors:

According to Hertzberg, there are 10 maintenance factors. These are company policy and administration, technical supervision, salary, job security, personal life, status, working conditions, interpersonal relationship with superiors, interpersonal relationship with peers and interpersonal relationship with subordinates.

These maintenance factors are necessary to maintain at a reasonable level of satisfaction in employees. Any increase beyond this level will not produce any satisfaction to the employees: however, any cut below this level will dissatisfy them.

Motivational Factors:

These factors are capable of having a positive effect on job satisfaction often resulting in an increase in ones total output. Hertzberg includes six factors that motivate employees. These are achievement, recognition, advancement; work itself, possibility of growth and responsibility.

Most of the above factors are related with job contents. An increase in these factors will satisfy the employees: however, any decrease in these factors will not affect their level of satisfaction. Since, these increased level of satisfaction in the employees, can be used in motivating them for higher output.

Relations Movement:

Human relations movement refers to the researchers of organizational development who study the behavior of people in groups, in particular workplace groups and other related concepts in fields such as industrial and organizational psychology. It originated in the 1930s' Hawthorne studies, which examined the effects of social relations, motivation and employee satisfaction on factory productivity. The

movement viewed workers in terms of their psychology and fit with companies, rather than as interchangeable parts, and it resulted in the creation of the discipline of human resource management.

System Theory:

A system is a set of interrelated but separate parts working towards a common purpose. The arrangement of elements must be orderly and there must be proper communication facilitating interaction between the elements and finally this interaction should lead to achieve a common goal. Churchman west is one of the pioneers of system approach of management. Systems-oriented managers would make decision only after they have identified impact of these decisions on a other department and the entire organization.

The essence of the system approach is that each manager cannot function in isolated and within his organizational boundary of authority and responsibility of the traditional organizational chart. They must interlink their departments with the total organization and communicate with all other departments and employees and also with other organizations. Many of the concepts of general systems theory are finding their way into the language of management. Managers need to be familiar with the systems vocabulary so they can keep pace with current development:

1) Sub-System: The parts that make up the whole of a system are called sub-systems. And each system in turn may be a sub-system of a still larger whole. Thus a department is a sub-system of a plant, which may be a sub-system a company, which may be a sub-system of a conglomerate or an industry, which is a sub-system of the national economy, which is a sub-system of the world system.

2) **Synergy:** This means that the whole is greater than the sum of its parts. In organizational terms, synergy means that as separate departments within an organization cooperate and interact, they become more department than if each were to act in isolation. For Example, in a small firm, it is more efficient for each department to deal with one finance department than for each department to have a separate finance department of its own.

3) **Open and closed system:** A system is considered an open system if it interacts with its environment; it is considered a closed system if it does not. All organization interacts with their environment, but the extent to which they do so varies. For Example, an automobile plant is far more open system than a monastery or prison.

4) **System Boundary:** Each system has a boundary that separates it from its environment. In a closed system, the system boundary is rigid; in an open system, the boundary is more flexible. The system boundaries of many organizations have become increasingly flexible in recent years. For Example, managers at oil companies wishing to engage in offshore drilling nor must consider public concern for the environment. A trend is that American communities are demanding more and more environment responsibility from companies. For Example, Santa Rosa, California, a city of 1, 25,000 treats environment violations such as ―off-gassing a waste product, i.e., allowing it to evaporate into the atmosphere, as a potential criminal offence.

5) **Flow:** A system has flows of information, materials and energy (including human energy). These enter the system from the environment as inputs
e.g., raw materials) undergo transformation processes within the system (operations that alter them) and exit system as outputs (goods and service).

6) **Feedback:** This is the key to system controls. As operations of the system proceed, information is fed back to the appropriate people and perhaps to a computer, so that the work can be assessed and if necessary, corrected. For Example, when Aluminum Company of America began feeding production data back to the factory floor, workers in the Add, Washington, and Magnesium plant quickly observed ways to improve operations, boosting productivity by 72%. Systems theory calls attention to the dynamic and interrelated nature of organization and the management task. Thus, it provides a framework

within which one can plan actions and anticipate both immediate and far-reaching consequences, while allowing understanding unanticipated consequences as they develop. With a systems perspective, general managers can more easily maintain a balance between the needs of the various parts of the enterprise and the needs goals of the whole firm. ―It depends is an appropriate response to the important questions in management as well. Management theory attempts to determine the predictable relationship between situations, actions and outcomes. So it is not surprising that a recent approach seeks to integrate the various schools of management thought by focusing on the interdependence of the many factors involved in the managerial situation.

Contingency Theory:

The contingency approach to management holds that management techniques should be dependent upon the circumstances. In this lesson, you will learn what the contingency approach to management is and the key elements of contingency management.

Definition: A contingency approach to management is based on the theory that management effectiveness is contingent, or dependent, upon the interplay between the application of management behaviors and specific situations. In other words, the way you manage should change depending on the circumstances. One size does not fit all.

Theory: The contingency approach to management finds its foundation in the contingency theory of leadership effectiveness developed by management psychologist Fred Fielder. The theory states that leadership effectiveness, as it relates to group effectiveness, is a component of two factors: task motivation, or relation motivation, and circumstances. You measure task motivation, or relation motivation, by the least preferred co-worker (LPC) scale. The LPC scale asks the manager to think of the person they least liking working with and then rate that person on a set of questions, each involving an 8-point scale. For example, a score of one would be uncooperative, and a score of eight would be cooperative. Fielder believed that people with a higher LPC score try to maintain harmony in heir work relationships, while people with a lower LPC score are motivated to focus on task accomplishment.

The theory states that task or relations motivations is contingent upon whether the manager is able to both control and effect the group's situational favorability, or outcome. According to the theory, you can assess situational favorability by three factors:

Leader-member relations: This factor addresses the manager's perception of his cooperative relations with his subordinates. In other words, is the cooperation between you and your employees good or bad?

Task structure: This factor relates to whether the structure of the work task is highly structured, subject to standard procedures and subject to adequate measures of assessment. Certain tasks are easy to structure, standardize and assess, such as the operation of an assembly line.

Position power: This factor asks if the manager's level of authority is based on punishing or rewarding behavior. For example, does the manager derive his authority from providing bonuses for meeting sales goals or terminating employees for failure to meet the goals; The combination of leader-member relations, task structure and position power create different situations that have been coined octants one through eight. You can divide these eight situations into three broad categories: favorable situations, intermediate situations and unfavorable situations.

According to the theory, each situation is handled the best by either high or low LPC managers. The theory argues that high LPC managers are most effective at influencing employee group behavior in intermediate situations, while low LPC managers are most effective in favorable or unfavorable situations.

Monetary and Non-Monetary incentives to motivate work teams:

The motivational factors that motivate a person to work and which can be used to enhance their performance can be classified into two categories— monetary factors and non-monetary factors

Monetary Factors:

Monetary factors are extrinsic to work, such as the following:

1. Salary or wages:
This is one of the most important motivational factors in an organization.
Salaries and wages should be fixed reasonably and paid on time.

2. Bonus:
Bonus is an extra payment over and above salary, and it acts as an incentive to perform better. It is linked to the profitability and productivity of the organization.

3. Financial incentives:
The organization provides additional incentives to their employees such as medical allowance, travelling allowance, house rent allowance, hard duty allowance and children educational allowance.

4. Promotion (monetary part):
Promotion is attached with increase in pay, and this motivates the employee to perform better.

5. Profit sharing:
This is an arrangement by which organizations distribute compensation based on some established formula designed around the company's profitability.

6. Stock option:
This is a system by which the employee receives shares on a preferential basis which results in financial benefits to the employees.

Non-monetary Factors:

Non-monetary factors are rewards intrinsic to work, such as the following:

1. Status:
An employee is motivated by better status and designation. Organizations should offer job titles that convey the importance of the position.

2. Appreciation and recognition:
Employees must be appreciated and reasonably compensated for all their achievements and contributions.

3. Work-life balance:
Employees should be in a position to balance the two important segments of their life—work and life. This balance makes them ensure the quality of work and life. A balanced employee is a motivated employee.

4. Delegation:
Delegation of authority promotes dedication and commitment among employees. Employees are satisfied that their employer has faith in them and this motivates them to perform better.

5. Working conditions:

Healthy working conditions such as proper ventilation, proper lighting and proper sanitation improve the work performance of employees.

6.Job enrichment:
This provides employees more challenging tasks and responsibilities. The job of the employee becomes more meaningful and satisfying.

7. Job security:
This promotes employee involvement and better performance. An employee should not be kept on a temporary basis for a long period.

LEADERSHIP

CONCEPT: Leadership is the process of influencing the behavior of other to work willingly an enthusiastically for achieving predetermined goals.

DEFINITION: ―Leadership is interpersonal influence exercised in a situation
 And directed through communication process, towards the attainment of a specified goal or goals‖. – **Tennenbaum**.

        ―Leadership is the process of influencing and supporting others to work enthusiastically toward achieving objectives‖. – **Barnard Key.**

Qualities of successful Leader:

1. A good leader has an exemplary character. It is of utmost importance that a leader is trustworthy to lead others. A leader needs to be trusted and be known to live their life with honesty and integrity. A good leader ―walks the talk‖ and in doing so earns the right to have responsibility for others. True authority is born from respect for the good character and trustworthiness of the person who leads.

2. A good leader is enthusiastic about their work or cause and also about their role. People will respond more openly to a person of passion and dedication. Leaders need to be able to be a source of inspiration, and be a motivator towards the required action or cause. Although the responsibilities and roles of a leader may be different, the leader needs to be seen to be part of the team working towards the goal. This kind of leader will not be afraid to roll up their sleeves and get dirty.

3. A good leader is confident. In order to lead and set direction a leader needs to appear confident as a person and in the leadership role. Such a person inspires confidence in others and draws out the trust and best efforts of the team to complete the task well. A leader who conveys confidence towards the proposed objective inspires the best effort from team members.

4. Leader also needs to function in an orderly and purposeful manner in situations of uncertainty. People look to the leader during times of uncertainty and unfamiliarity and find reassurance and security when the leader portrays confidence and a positive demeanor.

5. Good leaders are tolerant of ambiguity and remain calm, composed and steadfast to the main purpose. Storms, emotions, and crises come and go and a good leader takes these as part of the journey and keeps a cool head.

6. A good leader as well as keeping the main goal in focus is able to think analytically. Not only does a good leader view a situation as a whole, but is able to break it down into sub parts for closer inspection. Not only is the goalin view but a good leader can break it down into manageable steps and make progress towards it.

7. A good leader is committed to excellence. Second best does not lead to success. The good leader not only maintains high standards, but also is proactive in raising the bar in order to achieve excellence in all areas.

LEADERSHIP STYLES:
Leadership styles are the patterns of behavior which a leader adopts in influencing the behavior of his subordinates. Based on the degree of authority used by the supervisors, there are three leadership styles.

1. Autocratic Leadership: It is also known as authoritarian, directive or monothetic style. In autocratic leadership style, a manager centralizes decision-making power in him. He structures the complete situation for his employees and they do what they are told. Here the leadership may be negative because followers are uninformed, insecure, and afraid if the leader's authority.

Advantages:-
1. It provides strong motivation and reward to a manager exercising this style.
2. It permits very quick decisions as most of the decisions are taken by a single person.
3. Strict discipline will be maintained.
4. Less competent subordinates also have scope to work in the organization under his leadership style.

Disadvantages:-
1. Employees lack motivation; Frustration, low morale and conflict develop in the organization.
2. There is more dependence and less individuality in the Organization. As such future leaders in the organization do not develop.
2. People in the organization dislike it specially when it is strict and the motivational style is negative.

1. Participative Leadership:-
This style is also called democratic, consultative or ideographic. A participative is defined as mental and emotional involvement of a person in a group situation which encourages him to contribute to group goals and share responsibility in them. A participative manager decentralizes his decision-making process, instead of taking unilateral decisions, he emphasis on consultation and participation of his subordinates.

2. Free Rein Leadership:-
Free Rein or lassie – faire technique means giving complete freedom to subordinates. In this style, manager once determines policies, program and limitations for action and the entire process is left to subordinates. Group member's person everything and the manager usually maintains contacts with outside persons to bring the information and materials which the group needs.

LEADERSHIP STYLES: - Leadership styles refer to a leader's behavior. Behavioral pattern which the leader reflects in his role as a leader is often described as the style of leadership. It is the result of the philosophy, personality and experience of the leader. The important leadership styles are as follows:-

1. Autocratic (or) Authoritarian leaders
2. Participative (or) Democratic leaders
3. Free rein (or) Laiser faire leaders

Autocratic Leadership Style: - This is also known as authoritarian, directive style. In this style manager centralizes decision-making power in him. He structures the complete work situation for his employees. He does not entertain and suggestions or initiative from subordinates. He gives orders and assigns tasks without taking subordinates opinion. There are three categories of autocratic leaders.

Strict Autocrat: - He follows autocratic styles in a very strict sense. His method of influencing subordinates behavior is through negative motivation that is by criticizing subordinates, imposing penalty etc…

Benevolent Autocrat: - He also centralizes decision making power in him, but his motivation style is positive. He can be effective in getting efficiency
n man situations. Some like to work under strong authority structure and they drive satisfaction by this leadership.

Incompetent autocrat: - Sometimes, superiors adopt autocratic leadership style just to hide their in competency, because in other styles they may exposed before their subordinates. However, this cannot be used for a long time.

Advantages:-
1. It provides strong motivation and reward to manager.
2. It permits very quick decisions.
3. Less competent subordinates also have scope to work in the organization.

Disadvantages:-
1. People in the organization dislike it specially when it is strict and the motivational style is negative.
2. Employees lack motivation frustration, low morale and conflict develops in the organization.

3. There is more dependence and less individuality in the organization.
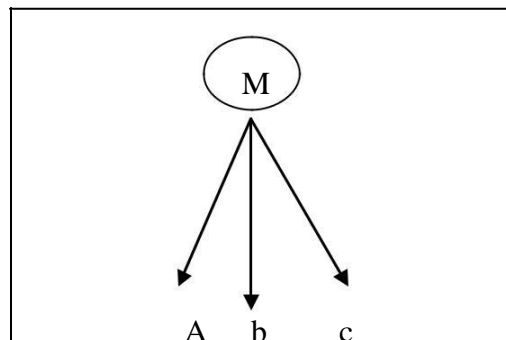
Participative Leadership Style:-It is also called as democratic, consultative or idiographic leadership style. In this style the manager decentralizes his decision-making process. Instead of taking unilateral decision he emphasizes consultation and participation of his subordinates. He can win the cooperation of his group and can motivate them effectively and positively.

Advantages:-

1. Employees are highly motivated.
2. The productivity of employees is very high.
3. Subordinates share the responsibility with the superior and try to safeguard them also.

Disadvantages:-
1. Complex nature of organization requires as through understanding of its Problems which lower-level employees may not be able to do.
2. Some people in the organization want minimum interaction with their superior.
3. Some leaders may use this style as a way of avoiding responsibility

Free-rein Leadership:-A free-rein leader does not lead, but leaves the group entirely to itself as shown in the following figure.
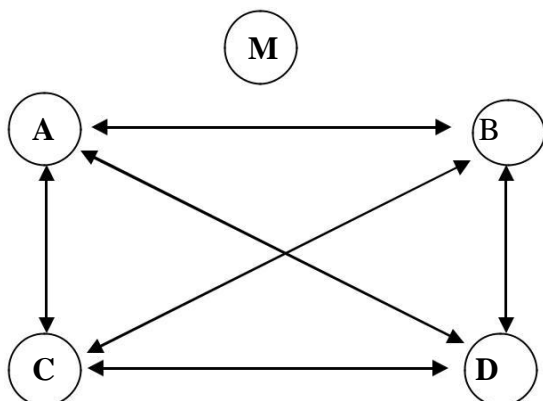
In this style, manager once determines policy, program, and limitations for action and the entire process is left to subordinates group members perform everything and the manager usually maintains contacts with outside persons to bring the information and materials which the group needs.

The following figure shows the spectrum of a wide variety of leadership styles moving from a very authoritarian style at one end to a very democratic style at the other end, as suggested by Tannenbaum and warren H.schmidt.

Autocratic   Democratic   Free Rein

Use of Authority

Area of freedom permitted to
Subordinates
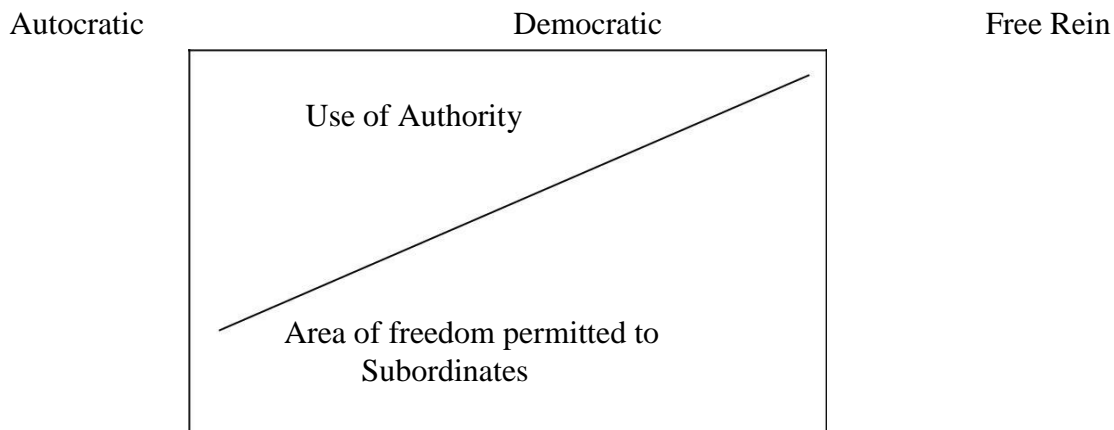
<u>Social Responsibility of Management:</u>

Social responsibility refers to the process with includes several activities from providing safe products and services to giving a portion of the company's profits to welfare organizations.

1. Responsibility towards shareholders: The business enterprise hastheresponsibilitytoprovidefairreturnoncapitaltotheshareholders.Thefirmmustprovidethemregular,accurate,andfullinformationabouttheworkingofenterpriseinordertofulfillandencouragetheirinterestintheaffairsofthecompany.

2. Responsibility towards consumers: Themanagementhastoprovidequalityproductsandservicestothecustomersatreasonableprices.Itshouldconsidercustomersuggestionsandalsoplanitservicesmoreeffectivelythroughconsumersatisfactionsurvey.

3. Responsibility towards employees: Good working conditions motivate workerstocontributetheirbestitistheresponsibilityofthemanagementrecognizetheirunionsandrespecttheirrighttoassociatewithaunionoftheirchoices.

4. Responsibility towards creditors: Thebusinesshastorepaytheloansithastakenfromthefinancialinstitutionsaspertherepaymentschedule alsoitshouldinformthecreditorsaboutthedevelopmentsinthecompanyfromtime-to-time.

5. Responsibility towards Government: The business firm has to pay it taxes and be fair in its endeavors. It should also support the government in community development projects.

6. Responsibility towards competitors: The business firm should always maintain the highest ethical standards and maintain cordial relations with each of the competitors, which is a critical and sensitive segment.

7. Responsibility towards public: Business units have tremendous responsibility towards the general public to support the cause of community development. Most of the companies maintain public relations departments exclusively to maintain good relations with the community.

UNIT-II
ORGANISATION DESIGN AND STRUCTURES

INTRODUCTION:

―Management is a process involving planning, organizing, directing and controlling human efforts to state of objectives in an organization.‖

The second phase of management process is organizing, which basically involves analysis of activities to be performed for achieving organizational objectives, grouping these activities into various division, departments and sections so that these can be assigned to various individuals and delegating them appropriate authority so that they are able to carry on their work effectively.

CONCEPT OF ORGANISATION AND ORGANISING:

In management literature, sometimes the term organization and organizing are used inter changeably because the term organization is used in many ways. But it is not correct organization is different from organizing. Organizing is one of the functions of management where as organization refers to the institution where in the functions of management is performed.

Organizing is a process of –

☐ Determining, grouping and structuring the activities.

□ Creating rules for effective performance at work.
□ Allocation necessary authority and responsibility.
□ Determining detailed procedures and systems for different problems areas such as coordination, communication motivation etc.

The ultimate result of organizing is organization. In other words, organizing function ends with creating a structure of relationships.

FORMAL AND INFORMAL ORGANISATION:

Formal organization refers to the structure of well-defined jobs, each bearing a definite authority, responsibility and accountability.

CHARACTERISTICS:

1. Organization structure is designed by the top management to fulfill certain requirements.
2. Coordination among members and their control are well specified through process, procedures rules etc.
3. Organization concentrates more on the performance of jobs and not on the individuals performing the jobs.

Informal organization refers to the natural grouping of people on the basis of some similarity in an organization.

―It refers to people in group associations at work, but these associations are not specified in
The blue print of the formal organization, the informal organization means natural grouping
of people in the work situations

CHARCTERISTICS:

o Informal organization is a natural out come at the work place.
o Informal organization is created on the basis of some similarity among its members. The basis of similarity may be age, place of origin, caste, religion, Liking/disliking etc.
o Membership is an informal organization is voluntary.
o Behavior of members of the informal organization is coordinated and controlled by group norms and not by the norms of formal organization.

TYPES OF ORGANIZATIONAL STRUCTURES:

LINE ORGANISATION STRUCTURE

It is also known as scalar, military, or vertical organization and perhaps is the oldest form. In this form of organization managers have direct responsibility for the results; line organization can be designed in two ways.

1. PURE LINE ORGANISATION:

Under this form, similar activities are performed at a particular level. Each group of activities is self – contained unit and is able to perform the assigned activities without the assistance of others

```
Production Manager
                                    |
_____ |_____
         |                          |                          |
Foreman-A                      Foreman-B                   Foreman-C
         |                          |                          |
Worker                          Worker                      Worker
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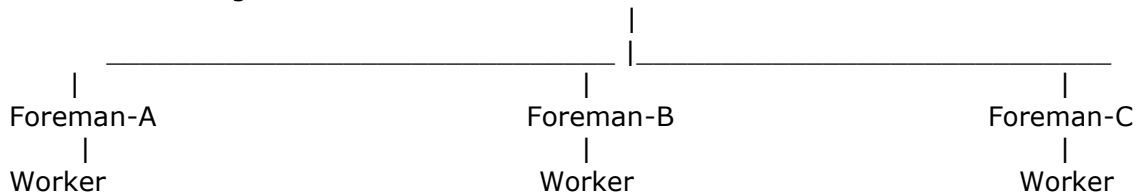
2. DEPARTMENTAL LINE ORGANISATION:

Under this form, entire activities are divided into different departments on the basis of similarity of activities. The basic objective of this form is to have uniform control, authority and responsibility.

```
                        Production Manager
                                    |
_____ |_____
         |                          |                          |
Foreman-A                      Foreman-B                   Foreman-C
(Body Moulding)                (Seating)                   (Finishing)
         |                          |                          |
Worker                          Worker                      Worker
```

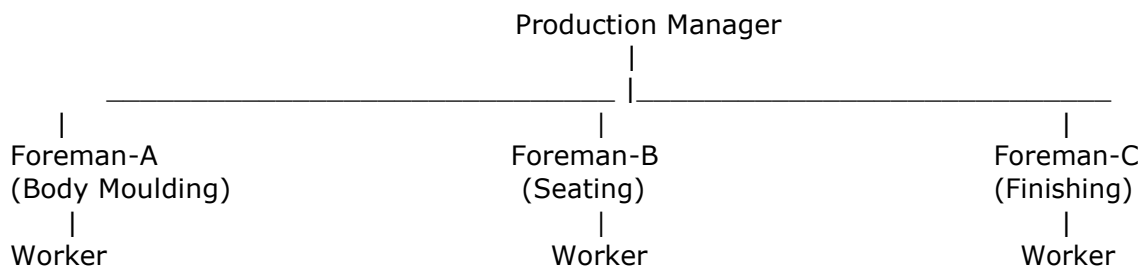| Merits	Demerits
1) It is simple to understand 2) Easy supervision & control 3) Quick decisions 4) It sets clearly the direct lines of authority and responsibility of a line manager	1) Lack of specialization 2) Low – Morale 3) Autocratic approach 4) Overburden to manager

Suitability:- It is suitable to small–scale organizations where the number of subordinates is quite small

LINE AND STAFF ORGANISATION:

It refers to a pattern in which staff specialists advise line managers to perform their duties. When the work of an executive increases its performance requires the services of specialists which he himself can not provide because of his limited capabilities on these matters. Such advise is provided to line managers by staff personal who are generally specialists in their fields. The staff people have the right to recommend, but have no authority to enforce their preference on other departments.

FEATURES:-

- ☐ This origin structure clearly distinguishes between two aspects of administration viz., planning and execution.
- ☐ Staff officers provide advice only to the line officers; they do not have any power of command over them.
- ☐ The staff supplements the line members.

MERITS	DEMERITS
1. It enhances the quality of decision	1. It may create more friction or

2. Greater scope for advancement	Conflict between line and staff
3. It relieves the line managers.	2. It is expensive
4. Reduction of burden.	3. It creates confusion

SUITABILITY: - It can be followed in large organizations where specialization of activities is required, because it offers ample opportunities for specialization.
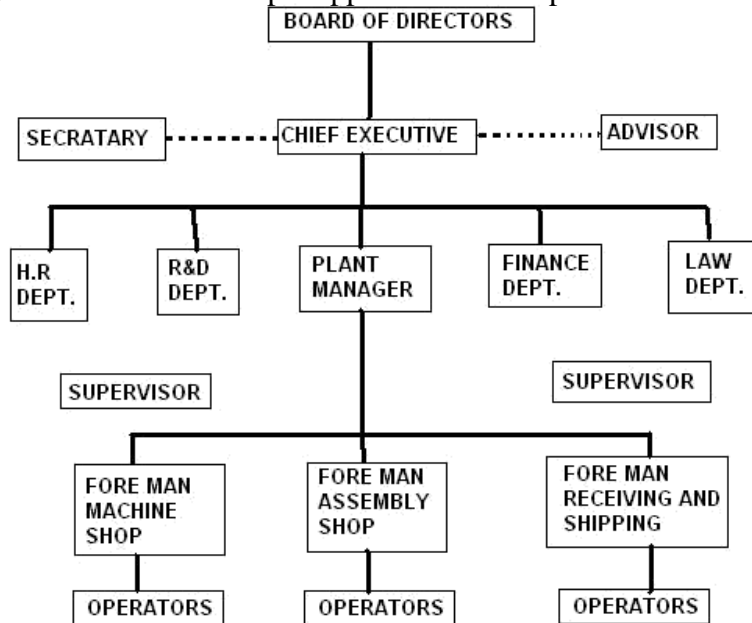
FUNCTIONAL ORGANISATION STRUCTURE:-

It is the most widely used organization structure in the medium and large scale organizations having limited number of products. This structure emerges from the idea that the organization must perform certain functions in order to carry on its operations.

Functional structure is created by grouping the activities on the basis of functions required for the achievement of organizational objectives. For this purpose, all the functions required are classified into basic, secondary and supporting functions according to their nature & importance.

FEATURES:

1) The whole activities of an organization are divided into various functions
2) Each functional area is put under the charge of one executive
3) For any decision, one has to consult the functional specialist

MERITS	DEMERITS
1) Planned specialization	1) calls for more coordination
2) Facilitates large scale production	2) no clear line of authority
3) Disciplinary controls are well defined	3) slow decision making
	4) lack of responsibility
4) Offers clear career paths	
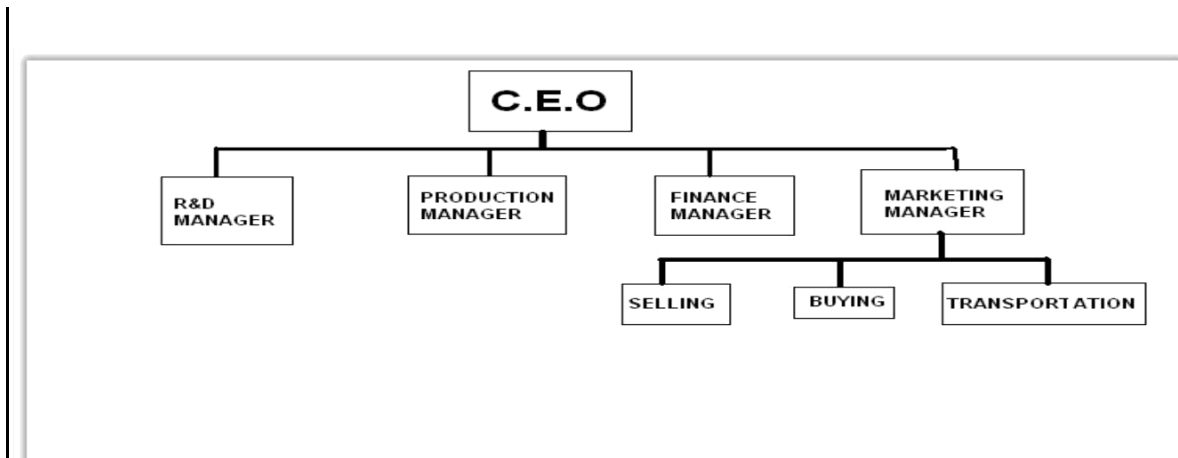
COMMITTEE ORGANISATION: -

Committee organization structure:

A committee does not represent a separate type of organization like line and staff, or functional. It is rather a device which is used as supplementary to or in addition to any of the above types of organizations.

A committee may be defined as a group of people performing some aspects of Managerial functions. Thus, a committee is a body of persons appointed or elected for the Consideration of specific matters brought before it

MATRIX ORGANISATION

It is also called project organization. It is a combination of all relationships in the organization, vertical, horizontal and diagonal. It is a mostly used in complex projects. The main objective of Matrix organization is to secure a higher degree of co-ordination than what is possible from the conventional, organizational structures such as line and staff.

In matrix organization structure, a project manager is appointed to co-ordinate the activities of the project. Under this system a subordinate will get instructions from two or more bosses, Viz., administrative head and his project manager.

Merits
1. It offers operational freedom & flexibility
2. It focuses on end results.
3. It maintenance professional Identity.
4. It holds an employee responsible for management of resources.

Demerits:-
1. It calls for greater degree of coordination,
2. It violates unity of command.
3. Difficult to define authority & responsibility.
4. Employee may be de motivated.
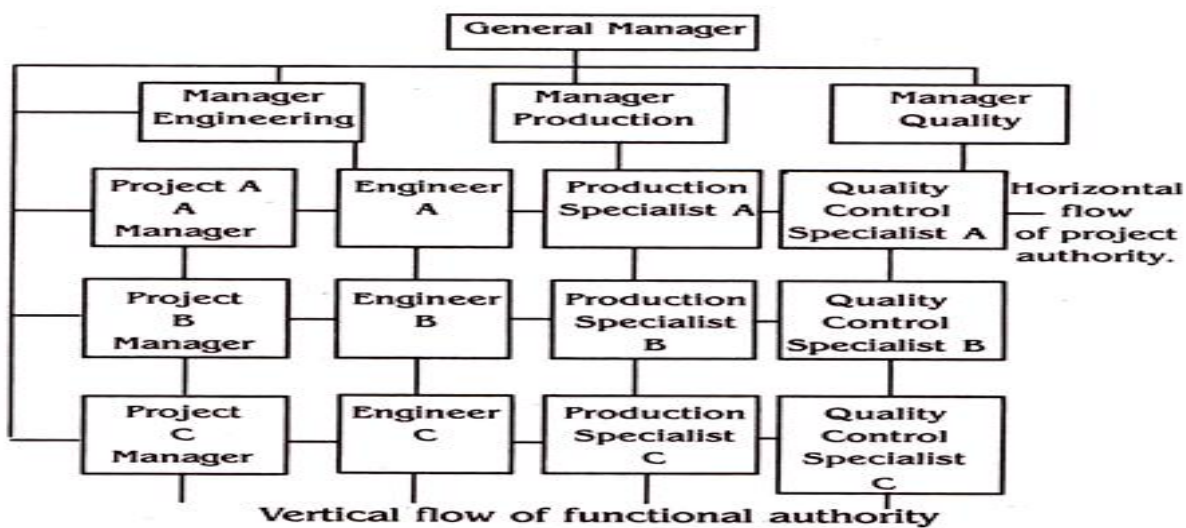
FIGURE 6.14 : MATRIX ORGANISATION

Suitability:-
It can be applicable where there is a pressure for dual focus, pressure for high in formation processing, and pressure for shred resources. Ex:- Aerospace, chemicals, Banking, Brokerage, Advertising etc..,

Virtual Organization

Virtual organizations facilitate competitiveness particularly when these organizations are part of the global economy. Here, there can be alliances and partnerships with other organizations almost all over world. It is a flexible Organization structure that removes the traditional boundaries. It allows easy reassignment and reallocation of resources to take quick advantage of shifting opportunities in global markets. To avoid disintegration and to attain the effective needed focus, the lead virtual organizations must have a shared vision, strong brand and high trust culture.

The virtual Organization is a temporary network of companies that come together quickly to exploit fast changing opportunities. Virtual Organizations appear to be bigger than traditional organizations. As

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virtual organizing requires a strong information technology (IT) platform. The boundaries that traditionally separate a firm from its suppliers, customers and even competitors are largely eliminated, temporarily and in respect to a given transaction or business purpose. Virtual Organizations come into being 'as needed' when alliances are called into action to meet specific operating needs and objectives. When the task is complete, the alliance rests until next called into action. Each partner in the alliance contributes to the virtual Organization what it is best at-its core competence.

Cellular Organization: Organization structured around the units/cells that complete the entire assembly processes are called cellular organizations. In the modem organizations, cellular Organizations have been replacing the continuous line or linear production process systems. In cellular organizations, workers manufacture total product or subassemblies in teams (cells).

Every team (cell) of workers has the responsibility to improve or maintain the quality and quantity of its products. Each team is free to reorganize itself to improve performance and product quality. These cells comprise self- managed teams. They monitor themselves and also correct where necessary on their own. Cellular Organizations are characterized by much smaller staff all over the Organization with middle management positions reduced and lean management members at the top. It is both a lean and flat structure.

Team Structure
A structure in which the entire organization is made up of work groups or teams is known as team structure. Team structures are both permanent and also temporary in nature as situation demands. Traditional Organizations are characterized by vertical structures and modem Organizations are identified by the horizontal i.e., team structures. 'We report to each other' is the main feature of team structure.

It leads to boundary less Organization in a borderless world. In team structures, we find cross functional teams meant for improving lateral relations, solving problems, completing special projects and accomplishing routine tasks. A cross functional team comprises members from different functional departments such as marketing, finance, HR, production etc. Project teams are convened for a particular task or project and these get dissolved once task is completed. The intention here is to quickly bring together the people with the needed talents and focus their efforts intensely to solve a problem or take advantage of a special opportunity. Here employees are more involved and empowered because of reduced barriers among functional areas. Sometimes, when there is pressure on teams to perform and there is no clear chain of command, team structures fail to deliver results.

Boundary Less Organization:-

Problems with traditional organizational structures:-
1. Lack of flexibility to changing mission needs/rapidly changing world.
1. Slow/poor in responding customer requirement.
2. Failure to get things to done.
3. Customer/vendor has a hard time dealing with the organization.

What are the boundaries?
- **Vertical:** Boundaries between layers within an organization.
- **Horizontal:** Boundaries which exist b/w organizational departments.
- **External:** Barriers between the organization and the out side world.(Customers, suppliers other govt. committees).

       ◻ **Geographic:** Barriers among organization units located in different countries.
       Problem:-isolation of innovative practices & ideas.

What is boundary less Organization?
It may be defined as an organization structure that can avoid all the barriers (vertical, horizontal, external, geographic) much more permeable than they are now;
Boundary less organization allows free flow of ides/information / resources throughout the organization and into others.

A boundary less organization is the opposite of a bureaucracy with numerous barriers and division. In contrast, the organization with out boundaries offers interaction and networking among professionals inside and outside the organization. The organization model is fluid and highly adaptive, much like an open system in biology.
Jack Welch, former CEO of General Electric, stated his vision for the company as a ―boundary less company‖. By this he meant an ―open, anti-parochial environment, friendly toward the seeking and sharing of new ideas, regardless of their origin The purpose of this initiative was to remove barriers between the various departments as well as between domestic and international operations. To reward people for adopting the ―integration model, bonuses were awarded to those who not only generated new ideas but also shared them with others.

Inverted Pyramid structure:
The traditional business is styled within form of a pyramid along with the chief executive officer at the top, senior executives underneath, and many more. There are several layers in the management structure, that reflects who reports to whom. In the inverted management pyramid display in figure, customers have the most significant role in driving the business. It also provides the front line employees a same ability as they are closest to the customers. Because the customers are considered basic, it also helps to improve the business. A flow of communication from the customers and inside the enterprise improves vastly. At one the inverted pyramid idea is accepted, a role of management requires undergoing a change: From a commanding role, it shall become a supporting one

Lean and flat organization structure:
Lean Organizational Structure:

Large, complex organizations often require a taller hierarchy. In its simplest form, a tall structure results in one long chain of command similar to the military. As an organization grows, the number of management levels increases and the structure grows taller. In a tall structure, managers form many ranks and each has a small area of control. Although tall structures have more management levels than flat structures, there is no definitive number that draws a line between the two.

Flat Organizational Structure:

Flat structures have fewer management levels, with each level controlling a broad area or group. Flat organizations focus on empowering employees rather than adhering to the chain of command. By encouraging autonomy and self-direction, flat structures attempt to tap into employees'creative talents and to solve problems by collaboration.

MODERN TRENDS IN ORGANISATIONAL STRUCTURE DESIGNS:

Organizations in the recent times have been gearing themselves to suit to the growing demands from their stakeholders in terms of responsiveness, flexibility, agility, adaptability etc. In this process, they are following organic structure, which are more agile, flexible and adaptable to the changing circumstances. Virtual organizations, cellular organizations, team structure, boundaryless organization and inverted pyramid and different forms of organic structure that are widely seen among most of the sun-rise sectors such as financial services, Information Technology (IT) and IT enabled services. These structures have been contributing to the organic growth of the organization.

The focus of organic structures is to do away with those activities which do not directly contribute to the growth of the organization and focus only on those activities which directly lead the organization for the achievement of the given goals.

These are discussed below:

1. Virtual Organization:

Virtual organizations facilitate competitiveness particularly when these organizations are part of the global economy. Here, there can be alliances and partnerships with other organizations almost all over world. It is a flexible organization structure that removes the traditional boundaries. It allows easy reassignment and reallocation of resources to take quick advantage of shifting opportunities in global markets. To avoid disintegration and to attain the effective needed focus, the lead virtual organizations must have a shared vision,, strong brand and high trust culture.

The virtual organization is a temporary network of companies that come together quickly to exploit fast   changing opportunities. Virtual organizations appear to be bigger than traditional organizations. As virtual organizing required a strong information technology(IT) platform, The boundaries that traditionally separate a firm form its suppliers, customers and even competitors are largely eliminated, temporarily and in respect to a given transaction or business purpose. Virtual organizations come into being 'as needed' when alliances are called into action to meet specific operating needs and objectives. When the task is complete, the alliances rest until next called into action. Each partner in the alliance contributes to the virtual organization what it is best as-its core competence.

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4.   Boundaryless Organization:

At the name indicates, a boundary less organization eliminates internal boundaries among subsystems and external boundaries with external environment. It is a combination of team and network structures with the addition of temporariness. Such type of organization structure is characterized by spontaneous teamwork and communication. This replaces formal chain of command. It is a dynamic organization structure wherein organizational needs are met through a judicious mix of outsourcing contracts and alliances as and when needed. The key features of boundary less organization include knowledge-sharing, absence of hierarchy and bureaucracy, empowerment voluntary participation of expert members, technology utilization and temporariness. The focus is on mustering necessary talent and competencies required for the achievement of a task without any bureaucratic restrictions. Creativity, quality, timeliness, increase in speed and flexibility are the benefits the boundary less organization yields. It also reduces inefficiencies. The boundary less organization is highly flexible and responsive. These draw on talent wherever it is found. Sometimes, they are ineffective due to problems in communication.

5.   Inverted Pyramid:

This is an alternative to the traditional chain of command. This is a structure, which is narrow at the top and wide at the base. It includes a few levels of management. For instance, sales people and sales support staff sit on the top as the key decision makers for all the issues related to sales and dealing with the customers. Since the sales staffs are in touch with the customer and aware of the requirements of the customers, they are given all the freedom to follow their own best judgment at all levels.

Departmentation: On the basis activity or Departmentation Industrialization has created problems, which are complex in nature. It created a necessity of large-scale industries to meet the increased demand. In large scale, industries there are large number of employees. For the sake of efficient supervision and control, the factory/enterprise is divided into different departments. Each department is entrusted with a particular function for carrying out particular activity each departmental head is expected to control and supervise the work in his department.

Definition: The process of dividing the work and then grouping them into units and submits or departments for the purpose of administration.

DEPARTMENTATION AND DECENTRALIZATION:

The first task in designing an organization structure is the identification of activities and to group them properly. The process of grouping the activities is known as Departmentation.

The process of grouping of activities into units for the purpose of administration is called Departmentation. It can be defined "as the process by which activities or functions of enterprise are grouped homogeneously into different groups."

The administrative units are called divisions, units or departments. The followings are the basis of Departmentation:

(a) When Departmentation is done on the back of functions the departments created are production, marketing, accounting, and finance and personnel departments.

(b) When Departmentation is done on the basis of geographical area, the departments are known as eastern department, western department, northern and southern department.

(c) Departmentation can be done on the basis of customers.

(d) Departmentation can be done on the basis of product handled.

Method of Departmentation:

By function: It is divided into primary function to be performed such as, finance, marketing, production, personnel etc.

By product: All activities related to a particular product line may be grouped together. This basis of Departmentation has become increasingly important, especially for complex organizations producing different types of products.

By process: In this method, the manufacturing activity are sub divided on the basis of their process of production, similar machines such as all laths, milling machines, grinding machines, milling machine etc. are grouped into separate section, such as lathe department, milling department, drilling department.

By geographical region: This method may be adopted when the enterprise produces and sells in the wide market, often in international markets.

Decentralization or decentralization is the process of redistributing or dispersing functions, powers, people or things away from a central location or authority. While centralization, especially in the governmental sphere, is widely studied and practiced, there is no common definition or understanding of decentralization. The meaning of decentralization may vary in part because of the different ways it is applied. Concepts of decentralization have been applied to group dynamics and management science in private businesses and organizations, political science, law and public administration, economics and technology.

AUTHORITY AND RESPONSIBILITY:

Authority may be defined as the power to make decisions which guide the actions of another. It is a relationship between two individuals, one superior, other subordinate. The superior frames and transmits decisions with the expectation that these will be accepted by the subordinate.

Responsibility is defined as that obligation of an individual to carry out assigned activities to the best of his ability. It is not merely duty that is assigned but an obligation that the duty is performed.

PARITY OF AUTHORITY AND RESPONSIBILITY:

Principle of authority and responsibility suggests that authority of a person should match his responsibility. Otherwise, the performance of the managers goes unchecked where the authority exceeds the responsibility. It may lead to miss-utilization of authority and vice-versa.

DELEGATION OF AUTHORITY:
Delegation of authority is one of the important factors in the process of organizing. It is essential to the existence of a formal organization. Delegation means conferring authority from one manager to another in order to accomplish particular assignments.

CENTRALISATION AND DECENTRALISATION:
Another highly important issue in organizing is the extent to which authority is centralized, or decentralized, in a formal organization structure. In management centralization refers to concentration of authority and decentralization refers to dispersion of authority.

Principles for Effective Delegation of Authority:

There are a few guidelines in form of principles which can be a help to the manager to process of delegation. The **principles of delegation** are as follows: -

1. **Principle of result excepted-** suggests that every manager before delegating the powers to the subordinate should be able to clearly define the goals as well as results expected from them. The goals and targets should be completely and clearly defined and the standards of performance should also be notified clearly. For example, a marketing manager explains the salesmen regarding the units of sale to take place in a particular day, say ten units a day have to be the target sales. While a marketing manger provides these guidelines of sales, mentioning the target sales is very important so that the salesman can perform his duty efficiently with a clear set of mind.

2. **Principle of Parity of Authority and Responsibility-** According to this principle, the manager should keep a balance between authority and responsibility. Both of them should go hand in hand. According to this principle, if a subordinate is given a responsibility to perform a task, then at the same time he should be given enough independence and power to carry out that task effectively. This principle also does not provide excessive authority to the subordinate which at times can be misused by him. The authority should be given in such a way which matches the task given to him. Therefore, there should be no degree of disparity between the two.

3. **Principle of absolute responsibility-** This says that the authority can be delegated but responsibility cannot be delegated by managers to his subordinates which means responsibility is fixed. The manager at every level, no matter what is his authority, is always responsible to his superior for carrying out his task by delegating the powers. It does not means that he can escape from his responsibility. He will always remain responsible till the completion of task. Every superior is responsible for the acts of their subordinates and are accountable to their superior therefore the superiors cannot pass the blame to the subordinates even if he has delegated certain powers to subordinates example if the production manager has been given a work and the machine breaks down. If a repairman is not able to get repair work done, production manager will be responsible to CEO if their production is not completed.

4. **Principle of Authority level-** This principle suggests that a manager should exercise his authority within the jurisdiction/framework given. The manager should be forced to consult their superiors with those matters of which the authority is not given that means before a manager takes any important decision, he should make sure that he has the authority to do that on the other hand, subordinate should also not frequently go with regards to their complaints as well as suggestions to their superior if they are not asked to do. This principle emphasizes on the degree of authority and the level up to which it has to be maintained.

STATISTICALQUALITYCONTROL

Introduction: Quality is the determining factor the success of any product or service large resources are committed in every organization to ensure quality

Definition: It is defined as customer satisfaction in general and fitness for use in particular.   Both the external consumer who buy the product and services and the internal consumers that is, all divisions or departments of the business organization are equally interested in the quality.

Statistical quality control: The process of applying statistical principles to solve the problem of controlling the quality control of a product or service is called statistical quality control.

Quality elements: a) Quality design b) Quality conformance

a) Quality design: Quality of design refers to product feature such as performance, reliability durability, ease of use, serviceability

b) Quality conformance: Quality conformance means whether the product meets the given quality specification or not

Inspection: The process of measuring the output and comparing it to check whether it meets the given specified requirements or not, is called inspection.

Inspection Methods: The following are the methods of inspection based on merits

1) Incoming inspection: In this method, the quality of the goods and services arriving into the organization is inspected. This ensures that the material suppliers adhere to the given specifications with this defective material cannot enter into the production process. The focus is on the vendor's quality and ability to supply acceptable raw materials.

2) Critical point inspection: Inspecting at the critical points of a product manufacture gives valuable insight in to the completely functional process. At the points of manufacture that involve high costs or which offer no possibility for repair or rework, inspection is crucial further operation depend on these results critical point inspection helps to drop the defective production, and there by, facilitate avoiding unnecessary further expenditure on them.

3) Process inspection: This is also called patrolling inspection or floor inspection or moving inspection. Here the inspector goes around the manufacturing points in the shop floor to inspect the goods produced on random sample basis from time to time.

4) Fixed inspection: It provides for a centralized and independent where work is brought for inspection from time to time. This method is followed where the inspection equipment cannot be moved to the points of productions.

5) Final inspection: This is centralized inspection making use of special equipment. This certifies the quality of the goods before they are shipped.

Elements of statistical Quality Control: The technique under SQC can be divided in to two parts a) Process control b) Acceptance sampling

a) Process control: Process control is a technique of ensuring the quality of the products during the manufacturing process itself. When the process consistently produces items with acceptable or tolerable range of specification. It is said to be statically under control. Process control is achieved through control charts. Process control aims to control and maintain the quality of the products in the manufacturing process.

Statistical control charts: A control chart compares graphically the process performance data to compute statistical control limits. These control limits act as limit lines on the chart control chats are the tools to determine whether the process is under control or not. The quality of the product in process may be affected by chance cause or assignable cause.

Chance cause: such causes, which may or may not affect the manufacturing process are called chance cause, chance cause cannot even be identified .It is not possible to always maintain the given specification.

Assignable Cause: Assignable causes affect the quality of the production process. These causes can be identified and specified. Causes such as change in the labor shift, power fluctuations, or excessive tool wear are said to be assignable causes as they affect the quality of manufacturing process in different ways.

Process capability: Process capability refers to the ability to achieve measurable results from a combination of machines, tools, methods, materials and people engaged in production.

Confidence limits and control limit:

Confidence limit: It indicates the range of confidence level. A confidence level refers to the probability at the value of measurement or parameter, such as length of screw, is correct.

Ex: If a component is required with measurement of 50mm.across, then the buy accept all components measuring between 48mm and52mm across, considering a five percent confidence level.

Control limit: Control limits are found in the control charts. There are two control limits
1) Upper control limit (UCL) and2) Lower control limit (LCL).These are determined based on the principles of normal distribution

Ex**:** In a pilot investigation of the length of the nails produced in the shop floor, it is found that the mean length is cm, theS.D3σ, the measure of variability of the nails produced 0.2cm.

How do you construct the control chart for this data?

+3σUpper control limit
Length

-3σ lower control limit
Length
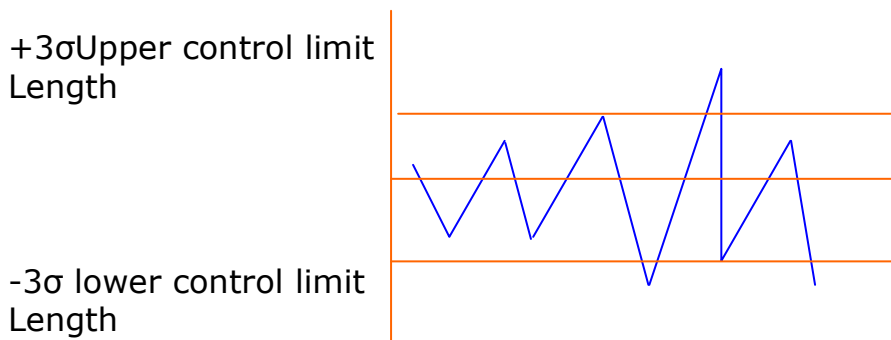
What is a variables control chart?

Variables control charts plot continuous measurement process data, such as length or pressure, in a time-ordered sequence. In contrast, attribute control charts plot count data, such as the number of defects or defective units. Variables control charts, like all control charts, help you identify causes of variation to investigate, so that you can adjust your process without over-controlling it.

There are two main types of variables control charts: charts for data collected in subgroups and charts for individual measurements.

Variables control charts for subgroup data

Each point on the graph represents a subgroup; that is, a group of units produced under the same set of conditions. For example, you want to chart a particular measurement from your process. If you collect and measure five parts every hour, your subgroup size would be 5.

Variables control charts for subgroups include Xbar, R, S, and Zone.
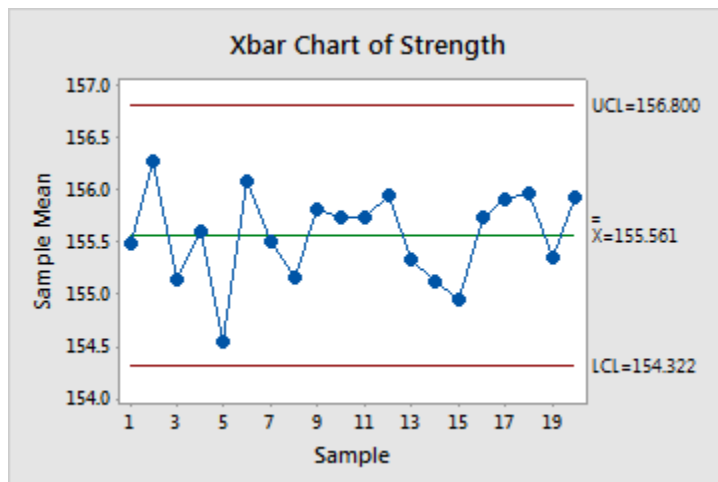
Xbar chart

Plots the process mean over time. Use to track the process level and detect the presence of special causes affecting the mean.

36
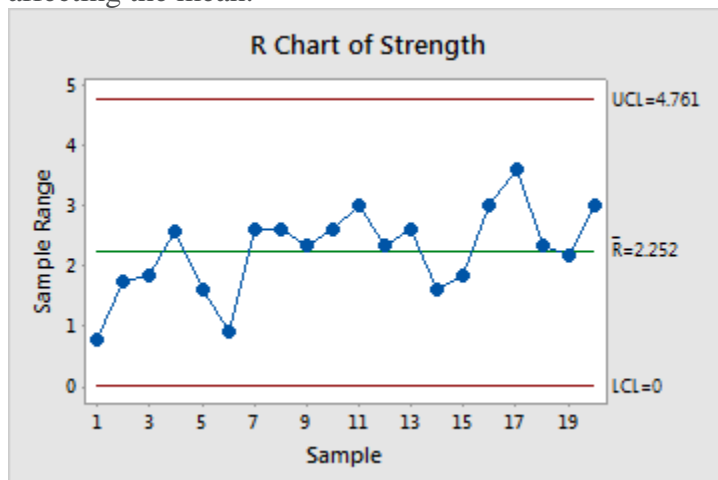
R chart

Plots the process range over time. Use to track process variation and detect unexpected variation.

What are Attributes Control Charts?

Attributes data arise when classifying or counting observations The Shewhart control chart plots quality characteristics that can be measured and expressed numerically. We measure weight, height, position, thickness, etc. If we cannot represent a particular quality characteristic numerically, or if it is impractical to do so, we then often resort to using a quality characteristic to sort or classify an item that is inspected into one of two "buckets".

An example of a common quality characteristic classification would be designating units as "conforming units" or "nonconforming units". Another quality characteristic criteria would be sorting units into "non defective" and "defective" categories. Quality characteristics of that type are called attributes.

Note that there is a difference between "nonconforming to an engineering specification" and "defective" -- a nonconforming unit may function just fine and be, in fact, not defective at all, while a part can be "in spec" and not function as desired (i.e., be defective).

Examples of quality characteristics that are attributes are the number of failures in a production run, the proportion of malfunctioning wafers in a lot, the number of people eating in the cafeteria on a given day, etc.

Types of attribute control charts dealing with the number of defects or non conformities are called 'c' charts (for count).

Control charts dealing with the proportion or fraction of defective product are called 'p' charts (for proportion).

There is another chart which handles defects per unit, called the u chart (for unit). This applies when we wish to work with the average number of nonconformities per unit of product.

Acceptance sampling

Acceptance sampling uses statistical sampling to determine whether to accept or reject a production lot of material. It has been a common quality control technique used in industry. It is usually done as products leaves the factory, or in some cases even within the factory. Most often a producer supplies a consumer a number of items and a decision to accept or reject the items is made by determining the number of defective items in a sample from the lot. The lot is accepted if the number of defects falls below where the acceptance number or otherwise the lot is rejected.

Rationale: Sampling provides one rational means of verification that a production lot conforms with the requirements of technical specifications. 100% inspection does not guarantee 100% compliance and is too time consuming and costly. Rather than evaluating all items, a specified sample is taken, inspected or tested, and a decision is made about accepting or rejecting the entire production lot.

Plans have known risks: an acceptable quality limit (AQL) and a reject able quality level, such as lot tolerance percent defective (LTDP), are part of the operating characteristic curve of the sampling plan. These are primarily statistical risks and do not necessarily imply that defective product is intentionally being made or accepted. Plans can have a known average outgoing quality limit (AOQL).

Acceptance sampling for attributes: A single sampling plan for attributes is a statistical method by which the lot is accepted or rejected on the basis of one sample Suppose that we have a lot of size ; a random sample of size is selected from the lot; and an acceptance number is determined. If it is found the number of nonconforming is less than or equal to, the lot is accepted; and if the number of nonconforming is greater than, the lot is not accepted. The design of a single sampling plan requires the selection of the sample size and the acceptance number.

MIL-STD-105 was a United States defense standard that provided procedures and tables for sampling by attributes (pass or fail characteristic). MIL-STD-105E was cancelled in 1995 but is available in related documents such as ANSI/ASQ Z1.4, "Sampling Procedures and Tables for Inspection by Attributes". Several levels of inspection are provided and can be indexed to several AQLs. The sample size is specified and the basis for acceptance or rejection (number of defects) is provided.

Sampling plans: Based on the number of samples drawn for taking accept/ reject decisions, the sampling methods are used. There are four methods of acceptance samplings.
1) Single sampling plan: A lot is accepted or rejected on the basis of a single sample drawn from that cost
2) Double sampling plan: If it is not possible to decide the fate of the lot on the basis of first sample, a second sample is drawn and the decision is taken on the basis of the combined results of first and second sample.
3) Multiple sampling plan: A lot is accepted or rejected based upon the result obtained from several samples (of parts) drawn from the lot.
4) Sequential sampling plan :(Item by item analysis) Sequential sampling
involves   increasing the sample size by one part at a time till the sample
becomes large enough and contains sufficient number of defectives to
decide intelligently whether to accept or reject the lot.

ABC Analysis: ABC analysis is a technique of controlling inventories based on their value and quantities. It is more remembered as an analysis for 'Always Better Control' of inventory. Here all items of the inventory are listed in the order of descending values, showing quantity held and their corresponding value. Then, the inventory is divided into three categories A, B and C based on their respective values.
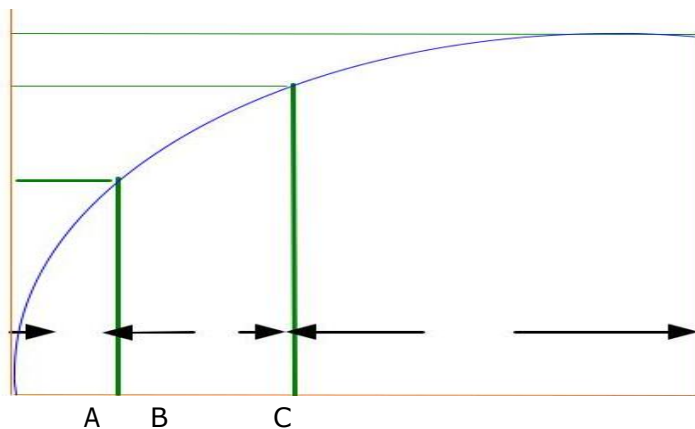
A   B   C
Volume of inventory (Units)

A – Refers to high value item

B – Refers to medium value item

 C – Refers to low value item

A category comprises of inventory, which is very costly and valuable. Normally 70% of the funds are tied up in such costly stocks, which would be around 10% of the total volume of stocks. Because the stocks in this category are very costly, these require strict monitoring on a day-to-day basis.

B category comprises of inventory, which is less costly. Twenty percent of the funds are tied up in such stocks and these accounts for over 20% of the volume of stocks. These items require monitoring on a weekly or fortnightly basis

C category consists of such stocks, which are of least cost. Volume wise, they form 70% of the total stocks but value-wise, they do not cost more than 10% of the investment in the stocks. This category of stocks can be monitored on a monthly or bi-monthly basis.

The following table summarizes the concept of ABC analysis;

Category	Value (%)	Volume (%)	Desired Degree of Control
A	70	10	STRICT
B	20	20	MODERATE
C	10	70	LOW

Economic Order Quantity (EOQ): Economic order quantity is defined that quantity of materials, which can be ordered at one time to minimize the cost of ordering and carrying the stocks. In other words, it refers to size of each order that keeps the total cost low.

 Inventory costs: The inventory costs can be classified into two categories,

   1) Inventory ordering cost 2) Inventory carrying cost.
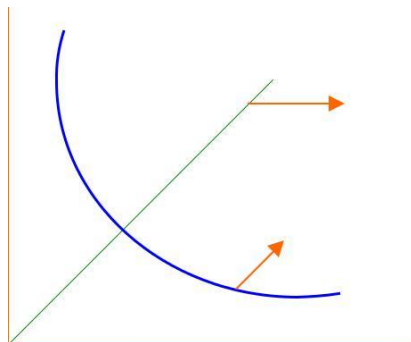
Inventory Ordering Costs (Co): The cost refer to the cost incurred to procure the materials particularly in large organizations, these cost are significant. This is also called as procurement cost. Definition: It is the cost of placing an order from a vendor. This includes all costs incurred from calling for quotation to the point at which the item is taken into stock. Ex: Receiving quotations, Processing purchase requisition,

Receiving materials and then inspecting it , Follow up and expediting purchase order, Processing sellers invoice.
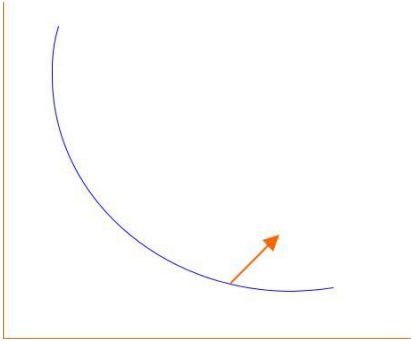
Inventory carrying cost: Carrying cost which are also known as holding costs are the costs incurred in maintaining the stores in the firm. They are based on average inventory and consist of: Ex: Storage cost includes: Rent for storage facilities, Salary of person and related storage expenses, Cost of insurance, Cost of capital.
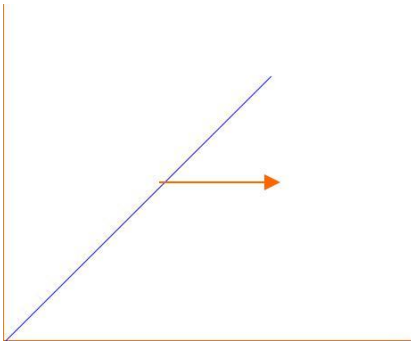
Determine EOQ:

Step1: Total Ordering cost per year = No. of orders placed per year x Ordering cost per Order = (A/S) x O

A = Annual demand

S = Size of each order (units per order)

O = Ordering cost per order

Step2: Total Carrying cost per year = Average inventory level x Carrying cost per year = (S/2) x C

A = Annual demand S = Size of each order (units per order) C = Carrying cost per unit

Step3:

EOQ is one where the total ordering is equal to total carrying cost

$$\frac{A}{S} \times O =$$

40

$$\frac{S}{2} \times C$$
$$2AO = S^2 \times C$$
$$S^2 = \frac{2AO}{C}$$

$$S = \sqrt{\frac{2AO}{C}}$$
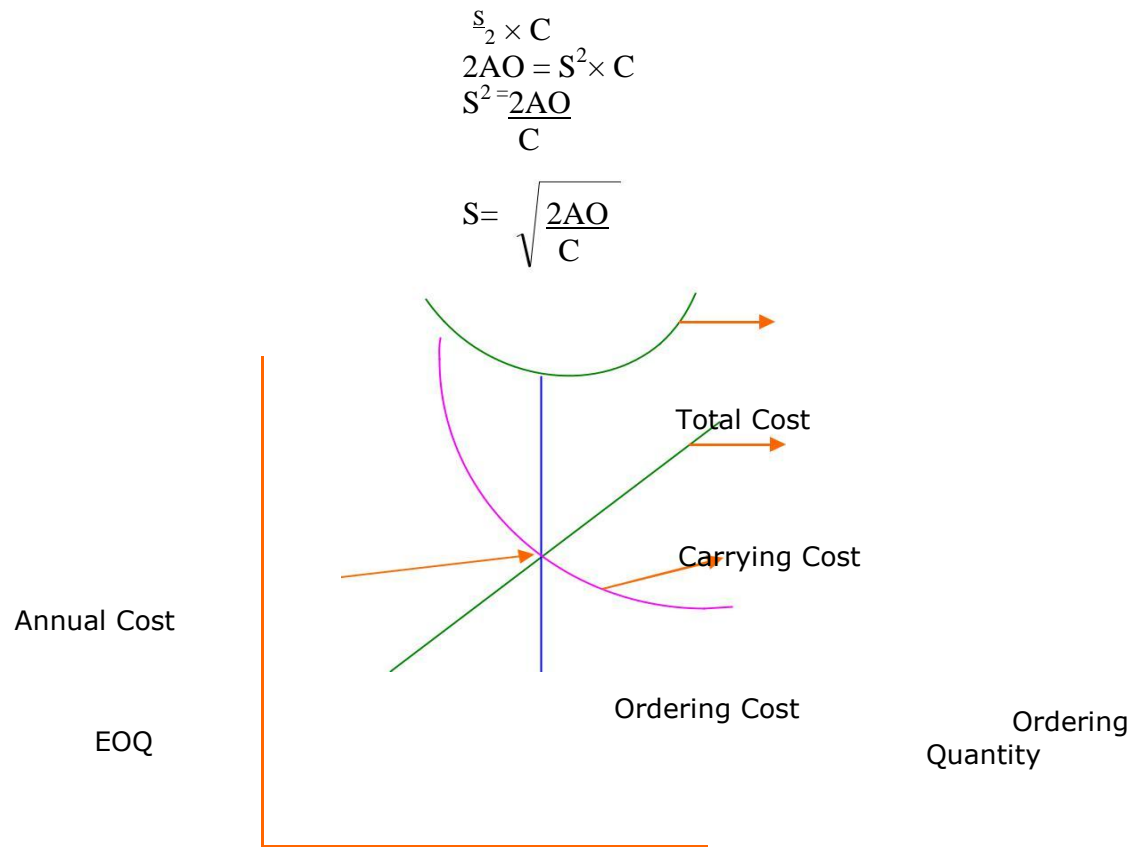
Where S is the Economic order quantity, A is the annual demand in units, O is the ordering cost per order and C is the carrying cost per unit

Ex: A biscuit manufacturing company buys lot bags of 10,000 bags wheat per annum. The cost per bag is Rs.500 and ordering cost is Rs.400. The inventory carrying cost is estimated at 10% of the price of the wheat determine EOQ and number of orders required per year.

Solution: Annual demand (A) = 10,000 bags Ordering cost per order (O) = Rs.400 Carrying cost per unit (C) = 10% of Cost price = 0.10 x 500 = Rs.50/- C 2AO EOQ = = 50 2 ×10,000× 400 = 1, 60,000 EOQ = 400 bags

The number of orders to be placed during the year = EOQ Annual demand (units) 25 orders 400 10,000 =

In the above case, the company has to place 25 orders to optimize its ordering and carrying costs.

Marketing management

Concept of Marketing

(1) Production Concept

(2) Product Concept

(3) Selling Concept

(4) Marketing Concept

(5) Societal Marketing

Concept

1. Production Concept: Those companies who believe in this philosophy think that if the goods/services are cheap and they can be made available at many places, there cannot be any problem regarding sale. Keeping in mind the same philosophy these companies put in all their marketing efforts in reducing the cost of production and strengthening their distribution system. In order to reduce the cost of production and to bring it down to the minimum level, these companies indulge in large scale production. This helps them in effecting the economics of the large scale production. Consequently, the cost of production per unit is reduced. The utility of this philosophy is apparent only when demand exceeds supply. Its greatest drawback is that it is not always necessary that the customer every time purchases the cheap and easily available goods or services.

2. Product Concept Those companies who believe in this philosophy are of the opinion that if the quality of goods or services is of good standard, the customers can be easily attracted. The basis of this thinking is that the customers get attracted towards the products of good quality. On the basis of this philosophy or idea these companies direct their marketing efforts to increasing the quality of their product it is a firm belief of the followers of the product concept that the customers get attracted to the products of good quality. This is not the absolute truth because it is not the only basis of buying goods. The customers do take care of the price of the products, its availability, etc. A good quality product and high price can upset the budget of a customer. Therefore, it can be said that only the quality of the product is not the only way to the success of marketing.

3. Selling Concept Those companies who believe in this concept think that leaving alone the customers will not help. Instead there is a need to attract the customers towards them. They think that goods are not bought but they have to be sold. The basis of this thinking is that the customers can be attracted. Keeping in view this concept these companies concentrate their marketing efforts towards educating and attracting the customers. In such a case their main thinking is _selling what you have'. This concept offers the idea that by repeated efforts one can sell-anything to the customers. This may be right for some time, but you cannot do it for a long-time. If you succeed in enticing the customer once, he cannot be won over every time. On the contrary, he will work for damaging your reputation. Therefore, it can be asserted that this philosophy offers only a short-term advantage and is not for long-term gains.

4. Marketing Concept Those companies who believe in this concept are of the opinion that success can be achieved only through consumer satisfaction. The basis of this thinking is that only those goods/service should be made available which the consumers want or desire and not the things which you can do. In other words, they do not sell what they can make but they make what they can sell. Keeping in mind this idea, these companies direct their marketing efforts to achieve consumer satisfaction. In short, it can be said that it is a modern concept and by adopting it profit can be earned on a long-term basis. The drawback of this concept is that no attention is paid to social welfare.

5. Societal Marketing Concept This concept stresses not only the customer satisfaction but also gives importance to Consumer Welfare/Societal Welfare. This concept is almost a step further than the marketing concept. Under this concept, it is believed that mere satisfaction of the consumers would not help and the welfare of the whole society has to be kept in mind. For example, if a company produces a vehicle which consumes less petrol but spreads pollution, it will result in only consumer satisfaction and not the social welfare.

Primarily two elements are included under social welfare-high-level of human life and pollution free atmosphere. Therefore, the companies believing in this concept direct all their marketing efforts towards the achievement of consumer satisfaction and social welfare.

Channels of Distribution:

A) Direct Channel or Zero Level Channels: When the manufacturer instead of selling the goods to the intermediary sells it directly to the consumer then this is known as Zero Level Channel. Retail outlets, mail order selling, internet selling and selling

(B) Indirect Channels: When a manufacturer gets the help of one or more middlemen to move goods from the production place to the place of consumption, the distribution channel is called indirect channel.

Following are the main types of it:

1. One Level Channel: In this method an intermediary is used. Here a manufacturer sells the goods directly to the retailer instead of selling it to agents or wholesalers. This method is used for expensive watches and other like products. This method is also useful for selling FMCG (Fast Moving Consumer Goods

2. Two Level Channel: In this method a manufacturer sells the material to a wholesaler, the wholesaler to the retailer and then the retailer to the consumer. Here, the wholesaler after purchasing the material in large quantity from the manufacturer sells it in small quantity to the retailer. Then the retailers make the products available to the consumers. This medium is mainly used to sell soap, tea, salt, cigarette, sugar, ghee etc.

3. Three Level Channel: Under this one more level is added to Two Level Channel in the form of agent. An agent facilitates to reduce the distance between the manufacturer and the wholesaler. Some big companies who cannot directly contact the wholesaler, they take the help of agents. Such companies appoint their agents in every region and sell the material to them. Then the agents sell the material to the wholesalers, the wholesaler to the retailer and in the end the retailer sells the material to the consumers.

Marketing mix Marketing Mix - A mixture of several ideas and plans followed by a marketing representative to promote a particular product or brand is called marketing mix. Several concepts and ideas combined together to formulate final strategies helpful in making a brand popular amongst the masses form marketing mix.

Elements of Marketing Mix

The elements of marketing mix are often called the four P's of marketing.

Product: Goods manufactured by organizations for the end-users are called products. Products can be of two types - Tangible Product and Intangible Product (Services).An individual can see, touch and feel tangible products as compared to intangible products. A product in a market place is something which a seller sells to the buyers in exchange of money.

Price: The money which a buyer pays for a product is called as price of the product. The price of a product is indirectly proportional to its availability in the market. Lesser its availability, more would be its price and vice a versa. Retail stores which stock unique products (not available at any other store) quote a higher price from the buyers.

Place: Place refers to the location where the products are available and can be sold or purchased. Buyers can purchase products either from physical markets or from virtual markets. In a physical market, buyers and sellers can physically meet and interact with each other whereas in a virtual market buyers and sellers meet through internet.

Promotion: Promotion refers to the various strategies and ideas implemented by the marketers to make the end - users aware of their brand. Promotion includes various techniques employed to promote and make a brand popular amongst the masses.

Promotion can be through any of the following ways: Advertising Print media, Television, radio are effective ways to entice customers and make them aware of the brand's existence. Billboards, hoardings, banners installed intelligently at strategic locations like heavy traffic areas, crossings, railway stations, bus stands attract the passing individuals towards a particular brand. Taglines also increase the recall value of

the brand amongst the customers. Word of mouth one satisfied customer brings ten more customers along with him whereas one dis-satisfied customer takes away ten more customers. That's the importance of word of mouth. Positive word of mouth goes a long way in promoting brands amongst the customers.

Product mix: The term _product mix'implies all the products offered by a firm for sale. It may consist of one line products or several allied product lines. Product line refers to an assortment or class of similar or related products and services. They may be similar in technology, customers needs, channel used, market served or in some other respect. An individual product in a line is known as a product item. There are several product items in a product line.

Product mix has three important aspects—width, depth and consistency. Width of the product mix is measured by the number and variety of product lines offered by a firm. It shows the degree of diversification of a firm's activities. The depth of product mix is determined by the number of items in a product line. By offering several brands of a product, a firm can cater to widely varying needs and tastes of customers and thereby beat its competitors. For instance, the range of bathing soaps (Lifebouy, Lux, Rexona, Liril, etc.) offered by Hindustan Lever Ltd. shows the depth of its product line while the width of its product mix consists of Dalda Vanaspati, Close-up Toothpaste, Talcum powder, etc. in addition to the soaps. The consistency of product mix refers to the degree of similarity between product lines in terms of their end-use, production requirements, price ranges, distribution channels, advertising media, etc. These dimensions of the product mix serve as guides to decisions regarding the additions and deletions of product items and line. By increasing the consistency of product mix, a firm can reduce its costs of operations and acquire unparalleled reputation in the market

Product life cycle:

Product life cycle theory divides the marketing of a product into four stages: introduction, growth, maturity and decline. When product life cycle is based on sales volume, introduction and growth often become one stage. For internationally available products, these three remaining stages include the effects of outsourcing and foreign production. When a product grows rapidly in a home market, it experiences saturation when low-wage countries imitate it and flood the international markets. Afterward, a product declines as new, better products or products with new features repeat the cycle. General Theory

When a product is first introduced in a particular country, it sees rapid growth in sales volume because market demand is unsatisfied. As more people who want the product buy it, demand and sales level off. When demand has been satisfied, product sales decline to the level required for product replacement. In international markets, the product life cycle accelerates due to the presence of "follower" economies that rarely introduce new innovations but quickly imitate the successes of others. They introduce low-cost versions of the new product and precipitate a faster market saturation and decline.

Introduction:

When an organization has developed a product successfully, it will be introduced into the national (and international) outlet. In order to create demand, investments are made with respect to consumer awareness and promotion of the new product in order to get sales going. At this stage, profits are low and there are only few competitors. When more items of the product are sold, it will enter the next stage automatically.

Growth: An effectively marketed product meets a need in its target market. The supplier of the product has conducted market surveys and has established estimates for market size and composition. He introduces the product, and the identified need creates immediate demand that the supplier is ready to satisfy. Competition is low. Sales volume grows rapidly. This initial stage of the product life cycle is characterized by high prices, high profits and wide promotion of the product. International followers have not had time to develop imitations. The supplier of the product may export it, even into follower economies.

Maturity: In the maturity phase of the product life cycle, demand levels off and sales volume increases at a slower rate. Imitations appear in foreign markets and export sales decline. The original supplier may reduce prices to maintain market share and support sales. Profit margins decrease, but the business remains attractive because volume is high and costs, such as those related to development and promotion, are also lower.

Decline: In the final phase of the product life cycle, sales volume decreases and many such products are eventually phased out and discontinued. The follower economies have developed imitations as good as the original product and are able to export them to the original supplier's home market, further depressing sales and prices. The original supplier can no longer produce the product competitively but can generate some return by cleaning out inventory and selling the remaining products at discontinued-items prices.

Product Life Cycle Stages example

It is a myth that every product has to go through each of the stages of the product life cycle. There are products that never get beyond the introduction stage, whereas other products remain in the maturity stage for a considerable length of time.

For example, the Philips light bulb was a product that found itself in the maturity stage for decades. The duration of each stage depends on demand, production costs and revenues. Low production costs and a high demand will ensure a longer product life. When production costs are high and there is a low demand for the product, it will not be offered on the market for a long time and, eventually, it will be withdrawn from the market via the **decline stage**.

HUMAN RESOURCE MANGEMENT

Behind the production of every product or service there is an human mind, effort and man hours (working hours). No product or service can be produced without help of human being. Human being is the fundamental resource for making or constructing anything. Today many experts claim that machines and technology are replacing human resource and minimizing their role or effort. However, indeed, machines and technology are built by the humans; they need to be operated or at least monitored by humans. Maybe because of this reason, companies have continuously been searching for talented, skilled and qualified professionals to further develop latest machines and technology, which again have to be controlled or Monitored by humans to bring out products.

It is undisputed fact that humans are being replaced by artificial intelligence which means robots. But all jobs cannot be handed over to Robots, to say in other words robots have its own limitations and all roles cannot be handled by robots. Though British theoretical physicist Stephen Hawking, Cambridge professor expressed about destruction of middle-class jobs due to raise of artificial intelligence, he still felt that natural intelligence or need for application of human mind is inevitable in certain roles.

Meaning:

Human Resource Management: Human resource management is the process of managing the human resources of an organization in tune with the vision of the top management.

Human Resource Management is the process of recruitment and selecting employee, providing orientation and induction, training and development, assessment of employee (performance of appraisal), providing compensation and benefits, motivating, maintaining proper relations with employees and with trade unions, maintaining employees safety, welfare and healthy measures in compliance with labor laws of the land.

Why name 'Human Resource Management'?

Human: refers to the skilled workforce in the organization.
Resource: refers to limited availability or scarceness.
Management: refers how to optimize and make best use of such limited and a scarce resource so as to meet the ordination goals and objectives.

Altogether, human resource management is the process of proper and maximizes utilization of available limited skilled workforce. The core purpose of the human resource management is to make efficient use of existing human resource in the organization. The Best example at present situation is, construction industry has been facing serious shortage of skilled workforce. It is expected to triple in the next decade from the present 30 per cent, will negatively impact the overall productivity of the sector, warm industry

experts.

Every organization's desire is to have skilled and competent people to make their organization more effective than their competitors. Humans are very important assets for the organization rather than land and buildings, without employees (humans) no activity in the organization can be done. Machines are meant to produce more goods with good quality but they should get operated by the human only.

Definitions:

Many great scholars had defined human resource management in different ways and with different words, but the core meaning of the human resource management deals with how to manage people or employees in the organization.

Edwin Flippo defines- HRM as "planning, organizing, directing, controlling of procurement, development, compensation, integration, maintenance and separation of human resources to the end that individual, organizational and social objectives are achieved."

The National Institute of Personal Management (NIPM) of India has defined human resources – personal management as "that part of management which is concerned with people at work and with their relationship within an enterprise. Its aim is to bring together and develop into an effective organization of the men and women who make up enterprise and having regard for the well – being of the individuals and of working groups, to enable them to make their best contribution to its success".

Human Resource Management

For any organization to function effectively, it must have resource of men (Human Resource), money, materials and machinery. The resources by themselves cannot fulfill the objectives of an organization, they need to be collected, co-ordinate and utilized through human resources. And, the effective management of human resources is also vital. Hence, Human Resource Management (HRM) has emerged as a major function in organizations. Human Resource Management is the organizational function that deals with issues related to people such as compensation, hiring, performance management, organization development, safety, wellness, benefits, employee motivation, communication, administration, and training.

The administrative discipline of hiring and developing employees so that they become more valuable to the organization.

Human Resource management includes:

1. conducting job analyses,
2. planning personnel needs, and recruitment,
3. selecting the right people for the job,
4. orienting and training,
5. determining and managing wages and salaries,
6. providing benefits and incentives,
7. appraising performance,
8. resolving disputes,
9. Communicating with all employees at all levels. Formerly called personnel management.
10. Maintaining awareness of and compliance with local, state and federal labor laws.

11. These are also called as functions of human resource management for the purpose of effect you utilization of human resource.

Objectives of HRM

Societal objective. To be socially responsible to the needs and challenges of society while minimizing the negative impact of such demands upon the organization. The failure of organizations to use their resources for society's benefit may result in restrictions. For example, societies may pass laws that limit human resource decisions.

Organizational objective. To recognize that HRM exists to contribute to organizational effectiveness. HRM is not an end in itself; it is only a means to assist the organization with its primary objectives. Simply stated, the department exists to serve the rest of the organization.
Functional objective. To maintain the department's contribution at a level appropriate to the organization's needs. Resources are wasted when HRM is more or less sophisticated than the organization demands. A department's level of service must be appropriate for the organization it serves.

Personal objective. To assist employees in achieving their personal goals, at least insofar as these goals enhance the individual's contribution to the organization. Personal objectives of employees must be met if workers are to be maintained, retained and motivated. Otherwise, employee performance and satisfaction may decline, and employees may leave the organization.

Nature of Human Resource Management

Human Resource Management involves management functions like planning, organizing, directing and controlling

- It involves procurement, development, maintenance of human resource
- It helps to achieve individual, organizational and social objectives
- Human Resource Management is a multidisciplinary subject. It includes the study of management, psychology, communication, economics and sociology.
- It involves team spirit and team work.
- It is a continuous process.

Why Is Human Resource Management Important to All Managers? Why are these concepts and techniques important to all managers? 'Perhaps it's easier to answer this by listing some of the personnel mistakes you don't want to make while managing. For example, you don't want to:
Hire the wrong person for the job

- Experience high turnover
- Have your people not doing their best
- Waste time with useless interviews
- Have your company taken to court because of discriminatory actions
- Have your company cited under federal occupational safety laws for unsafe practices
- Have some employees think their salaries are unfair and inequitable relative to others in the organization
- Allow a lack of training to undermine your department's effectiveness

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- Commit any unfair labor practices

Who is HR manager?

The Human Resource Manager is a mid-level position responsible for overseeing human resources activities and policies according to executive level direction. They supervise human resources staff as well as control compensation and benefits, employee relations, staffing, training, safety, labor relations, and employment records.

Key responsibilities of Human Resource Manager

Human Resource Manager is one of the most important key to open a lock hanging on the door of success in an organization. If a Human Resource Manager is efficient enough to handle and to take out best from his team members any organization and can achieve more from his target goals. Human Resource manager plays a very important role in hierarchy, and also in between the higher management and low level employees. Stated below are major responsibilities of Human Resource Manager:-

www.whatishumanresource.com
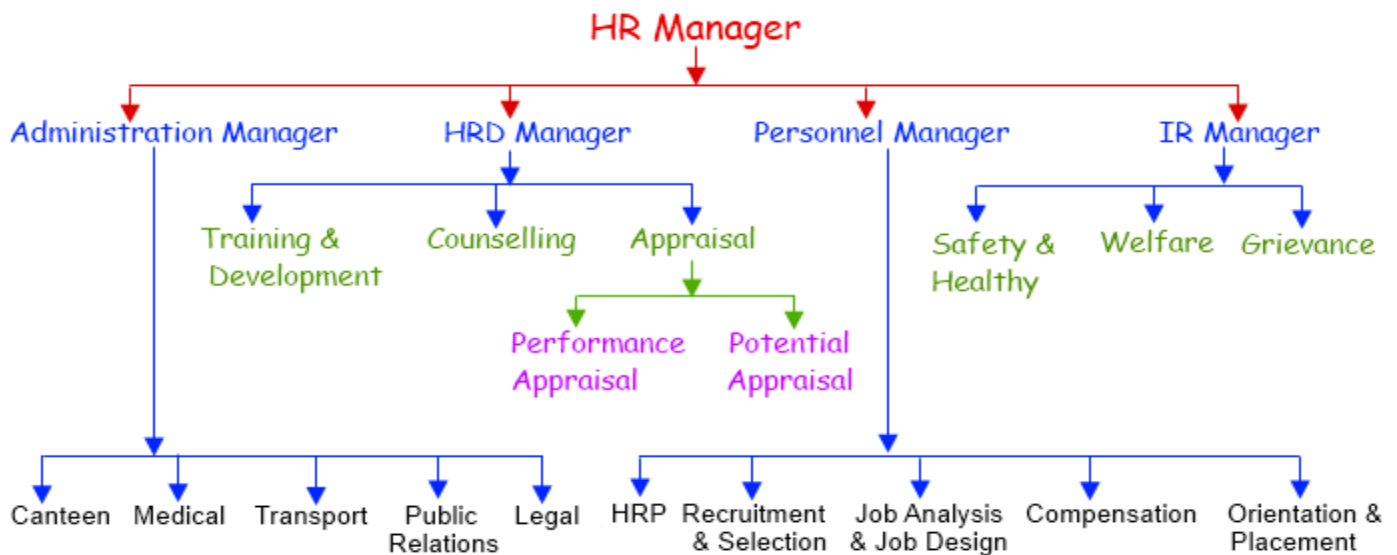
Scope of Human Resource Management

The scope of Human Resource Management refers to all the activities that come under the banner of Human Resource Management. These activities are as follows.

- **Human resources planning: -** Human resource planning or Human Resource Planning refers to a process by which the company to identify the number of jobs vacant, whether the company has excess staff or shortage of staff and to deal with this excess or shortage.

- **Job analysis design: -** Another important area of Human Resource Management is job analysis. Job analysis gives a detailed explanation about each and every job in the company.

- **Recruitment and selection: -** Based on information collected from job analysis the company prepares advertisements and publishes them in the newspapers. This is recruitment. A number of applications are received after the advertisement is published, interviews are conducted and the right employee is selected thus recruitment and selection are yet another important area of Human Resource Management.

- **Orientation and induction: -** Once the employees have been selected an induction or orientation program is conducted. This is another important area of Human Resource Management. The employees are informed about the background of the company, explain about the organizational culture and values and work ethics and introduce to the other employees.

- **Training and development: -** Every employee goes under training program which helps him to put up a better performance on the job. Training program is also conducted for existing staff that have a lot of experience. This is called refresher training. Training and development is one area where the company spends a huge amount.

- **Performance appraisal :-** Once the employee has put in around 1 year of service, performance appraisal is conducted that is the Human Resource department checks the performance of the employee. Based on these appraisal future promotions, incentives, increments in salary are decided.

- **Compensation planning and remuneration:** - There are various rules regarding compensation and other benefits. It is the job of the Human Resource department to look into remuneration and compensation planning.

- **Motivation, welfare, health and safety:** - Motivation becomes important to sustain the number of employees in the company. It is the job of the Human Resource department to look into the different methods of motivation. Apart from this certain health and safety regulations have to be followed for the benefits of the employees. This is also handled by the HR department.

- **Industrial relations:** - Another important area of Human Resource Management is maintaining co-ordinal relations with the union members. This will help the organization to prevent strikes lockouts and ensure smooth working in the company.

The Human Resource Officer is responsible for providing support in the various human resource functions, which include recruitment, staffing, training and development, performance monitoring and employee counseling.

Personnel Management:

Personnel management is the planning, organizing, and controlling of the procurement, development, compensation, integration and maintenance of people for the purpose of contributing to the organizational goals.
Personnel Management is basically an administrative record-keeping function, at the operational level. Personnel Management attempts to maintain fair terms and conditions of employment, while at the same time, efficiently managing personnel activities for individual departments etc. It is assumed that the outcomes from providing justice and achieving efficiency in the management of personnel activities will result ultimately in achieving organizational success.

Personal management versus Human resource management

HRM has a long history of growing from a simple welfare and maintenance function to that of a board level activity of the companies. In recent years, the focus on people management from human capital/intellectual capital perspective is also shaping firmly. However, the hard fact is that this growth can be generally witnessed in management literature and rarely in practice. Peripheral observation of people management in organization can mislead the observers since; hardly there could be any organization that is yet to rename its old fashioned title of industrial relations/ personnel /welfare/ administration department into HRM department. But, in practice, these organizations continue to handle the people management activities the way they had been handling earlier. The reasons for this could be many and varied. Among them, the potential reason is lack of clear understanding about the differences between personnel/IR and HRM.

BASIS FOR COMPARISON	PERSONNEL MANAGEMENT	HUMAN RESOURCE MANAGEMENT
Meaning	The aspect of management that is concerned with the work force and their relationship with the entity is known as Personnel Management.	The branch of management that focuses on the most effective use of the manpower of an entity, to achieve the organizational goals is known as Human Resource Management.
Approach	Traditional	Modern
Treatment of manpower	Machines or Tools	Asset
Type of function	Routine function	Strategic function
Basis of Pay	Job Evaluation	Performance Evaluation
Management Role	Transactional	Transformational
Communication	Indirect	Direct
Labor Management	Collective Bargaining Contracts	Individual Contracts
Initiatives	Piecemeal	Integrated
Management Actions	Procedure	Business needs
Decision Making	Slow	Fast
Job Design	Division of Labor	Groups/Teams

Focus	Primarily on mundane activities like employee hiring, remunerating, training, and harmony.	Treat manpower of the organization as valued assets, to be valued, used and preserved.

1. Personnel management function is often viewed as a function of the specialized staff.

   Human resource management function is the responsibility of all the line managers in the organization.
2. Personnel management goal is employee orientation

   Human resource management goal is organization orientation

3. Personnel management managerial function

   Human resource management operative function
4. Personnel management cooperative level manager concern

   Human resource management top level manager concern.

Personnel Management and Industrial Relations:

   The word personnel management is popular with different names, such as staff management, labour management, manpower management, industrial relations and modern times as human resources management. Industrial relations refer to the relation between the employees and management.

Features in Personnel Management:

1. Personnel management is concerned with managing people at all level in the organization

2. It is concerned with employees both as individuals and as a group
3. It is a method of helping the employees to identify and develop their potential.

4. It is a method of channelising this potential for the attainment of organizational goals.

It is required in very organization, in the form of the services of the personnel manager.

Characteristics of personnel management:

Maximum individual development: This principle stresses on the development of every person working in an organization. Workers are able to fulfill the objectives of an organization with the minimum cost. Hence, the employees in the organization should be properly developed. By this, employees will be able to develop themselves to the maximum extent of their capabilities. Their ability, productivity and efficiency can be used for achieving the objectives of the organization.

Scientific selection: For the proper co-ordination between work and workers, it is necessary to select the right person for the right job. Workers should be selected after a careful weighing of the requirements of

the jobs on the other hand, and assessment and evaluation of the abilities and attitudes of man on the other.

High morale: It is necessary to have high morale among the workers in an organization. For this purpose, ideal wage policy should be offered in the organization. Workers should be motivated by monetary and non-monetary incentives.

Dignity of labor: Human resource management specially act, so that the workers feel proud of their work or labor. Sometimes, like 'work is worship' notion should be developed in workers. This principle requires treating every job and every jobholder with dignity and respect.

Team spirit: Team spirit must be developed in the workers. They should work collectively and they should feel collective responsibility for the attainment of the objectives of the organization. For this purpose, workers must have the sense of cooperation, unity and mutual trust.

Effective communication: There must be effective channel of communication between the management and the workers. The orders of higher authorities should reach the workers, while worker's request and grievances should reach the higher authorities in a proper way. If communication system is not effective, then there will arise complex problem like mistrust, hatred and ill-will, and this in turn affects the production of the organization.

Fair remuneration: Labour should be given fair and proper compensation for the work they rendered. They should also be given fair incentives or rewards to recognize good performance. This develops industrial peace.

Effective utilization of human resources: The skills and abilities of human resources should be effectively utilized. Proper training facilities should be provided to workers. Human resource management is an art to get the work done by the people, to get the desired result. For this employees should be given humanly treatment in the organization.

Participation: This principle emphasizes the idea of labour participation in the management of the enterprise. Workers participation in management aims at increasing productivity of labour by improving co-operation between employer and employees.

Contribution to national prosperity: This principle stresses to provide a higher purpose of work to all employees and to contribute to national prosperity. For this purpose, human resource management should develop the sense of participation in labour to make them realize that their efforts alone can contribute to the prosperity of the organization and of the country

Human Resource Development

Human Resource Development is the part of human resource management that specifically deals with training and development of the employees in the organization.

Human resource development includes training a person after he or she is first hired, providing opportunities to learn new skills, distributing resources that are beneficial for the employee's tasks, and any other developmental activities.

INTRODUCTION

Development of human resources is essential for any organization that would like to be dynamic and growth-oriented. Unlike other resources, human resources have rather unlimited potential capabilities. The potential can be used only by creating a climate that can continuously identify, bring to surface, nurture and use the capabilities of people. Human Resource Development (HRD) system aims at creating such a climate. A number of HRD techniques have been developed in recent years to perform the above task based on certain principles. This unit provides an understanding of the concept of HRD system, related mechanisms and the changing boundaries of HRD.

HRD concept was first introduced by **Leonard Nadler** in 1969 in a conference in US. "He defined HRD as those learning experience which are organized, for a specific time, and designed to bring about the possibility of behavioral change".

Human Resource Development (HRD) is the framework for helping employees develops their personal and organizational skills, knowledge, and abilities. Human Resource Development includes such opportunities as employee training, employee career development, performance management and development, coaching, mentoring, succession planning, key employee identification, tuition assistance, and organization development.

The focus of all aspects of Human Resource Development is on developing the most superior workforce so that the organization and individual employees can accomplish their work goals in service to customers.

Human Resource Development can be formal such as in classroom training, a college course, or an organizational planned change effort. Or, Human Resource Development can be informal as in employee coaching by a manager. Healthy organizations believe in Human Resource Development and cover all of these bases.

Definitions of HRD

HRD (Human Resources Development) has been defined by various scholars in various ways. Some of the important definitions of HRD (Human Resources Development) are as follows:

- According to **Leonard Nadler,** "Human resource development is a series of organised activities, conducted within a specialised time and designed to produce behavioral changes."

- In the words of **Prof. T.V. Rao,** "HRD is a process by which the employees of an organization are helped in a continuous and planned way to (i) acquire or sharpen capabilities required to perform various functions associated with their present or expected future roles; (ii) develop their journal capabilities as individual and discover and exploit their own inner potential for their own and /or organizational development purposes; (iii) develop an organizational culture in which

superior-subordinate relationship, team work and collaboration among sub-units are strong and contribute to the professional well being, motivation and pride of employees." .

- According to **M.M. Khan,** "Human resource development is the across of increasing knowledge, capabilities and positive work attitudes of all people working at all levels in a business undertaking."

THE CONCEPT OF HUMAN RESOURCE DEVELOPMENT

Human resource development in the organization context is a process by which the employees of an organization are helped, in a continuous and planned way to:

1. Acquire or sharpen capabilities required to perform various functions associated with their present or expected future roles;
2. Develop their general capabilities as individuals and discover and exploit their own inner potentials for their own and/or organizational development purposes; and
3. Develop an organizational culture in which supervisor-subordinate relationships, teamwork and collaboration among sub-units are strong and contribute to the professional well being, motivation and pride of employees.

This definition of HRD is limited to the organizational context. In the context of a state or nation it would differ.

HRD is a process, not merely a set of mechanisms and techniques. The mechanisms and techniques such as performance appraisal, counseling, training, and organization development interventions are used to initiate, facilitate, and promote this process in a continuous way. Because the process has no limit, the mechanisms may need to be examined periodically to see whether they are promoting or hindering the process. Organizations can facilitate this process of development by planning for it, by allocating organizational resources for the purpose, and by exemplifying an HRD philosophy that values human beings and promotes their development.

Difference between HRD and HRM

Both are very important concepts of management specifically related with human resources of organization. Human resource management and human resource development can be differentiated on the following grounds:

- The human resource management is mainly maintenance oriented whereas human resource development is development oriented.

- rganisation structure in case of human resources management is independent whereas human resource development creates a structure, which is inter-dependent and inter-related.

- Human resource management mainly aims to improve the efficiency of the employees whereas aims at the development of the employees as well as organisation as a whole.

- Responsibility of human resource development is given to the personnel/human resource management department and specifically to personnel manager whereas responsibility of HRD is given to all managers at various levels of the organisation.

- HRM motivates the employees by giving them monetary incentives or rewards whereas human resource development stresses on motivating people by satisfying higher-order needs.

THE   NEED   FOR   HRD

HRD is needed by any organisation that wants to be dynamic and growth-oriented or to succeed in a fast-changing environment. Organisations can become dynamic and grow only through the efforts and competencies of their human resources. Personnel policies can keep the morale and motivation of employees high, but these efforts are not enough to make the organisation dynamic and take it in new directions. Employee capabilities must continuously be acquired, sharpened, and used. For this purpose, an "enabling" organisational culture is essential. When employees use their initiative, take risks, experiment, innovate, and make things happen, the organisation may be said to have an "enabling"   culture.

Even an organisation that has reached its limit of growth, needs to adapt to the changing environment. No organisation is immune to the need for processes that help to acquire and increase its capabilities for stability and renewal.

HRD   FUNCTIONS

The core of the concept of HRS is that of development of human beings, or HRD. The concept of development should cover not only the individual but also other units in the organisation. In addition to developing the individual, attention needs to be given to the development of stronger dyads, i.e., two-person groups of the employee and his boss. Such dyads are the basic units of working in the organisation. Besides several groups like committees, task groups, etc. also require attention. Development of such groups should be from the point of view of increasing collaboration amongst people working in the organisation, thus making for an effective decision-making. Finally, the entire department and the entire organisation also should be covered by development. Their development would involve developing a climate conducive for their effectiveness, developing self-renewing mechanisms in the organisations so that they are able to adjust and pro-act, and developing relevant processes   which   contribute   to   their   effectiveness.

Hence, the goals of the HRD systems are to develop:

1. The capabilities of each employee as an individual.
2. The capabilities of each individual in relation to his or her present role.
3. The capabilities of each employee in relation to his or her expected future role(s).
4. The dyadic relationship between each employee and his or her supervisor.
5. The team spirit and functioning in every organisational unit (department, group, etc.).
6. Collaboration among different units of the organisation.

7. The organisation's overall health and self-renewing capabilities which, in turn, increase the enabling capabilities of individuals, dyads, teams, and the entire organisation.

Features of Human Resource development

The essential features of human resource development can be listed as follows:

- Human resource development is a process in which employees of the organisations are recognized as its human resource. It believes that human resource is most valuable asset of the organisation.

- It stresses on development of human resources of the organisation. It helps the employees of the organisation to develop their general capabilities in relation to their present jobs and expected future role.

- It emphasise on the development and best utilization of the capabilities of individuals in the interest of the employees and organisation.

- It helps is establishing/developing better inter-personal relations. It stresses on developing relationship based on help, trust and confidence.

- It promotes team spirit among employees.

- It tries to develop competencies at the organization level. It stresses on providing healthy climate for development in the organization.

- HRD is a system. It has several sub-systems. All these sub-systems are inter-related and interwoven. It stresses on collaboration among all the sub-systems.

- It aims to develop an organizational culture in which there is good senior-subordinate relations, motivation, quality and sense of belonging.

- It tries to develop competence at individual, inter-personal, group and organizational level to meet organizational goal.

- It is an inter-disciplinary concept. It is based on the concepts, ideas and principles of sociology, psychology, economics etc.

- It forms on employee welfare and quality of work life. It tries to examine/identify employee needs and meeting them to the best possible extent.

- It is a continuous and systematic learning process. Development is a life long process, which never ends.

Benefits of Human Resource Development

Human resource development is now a days considered as the key to higher productivity, better relations

and greater profitability for any organization. Appropriate HRD provides unlimited benefits to the concerned organization. Some of the important benefits are being given here:

- HRD (Human Resource Development) makes people more competent. HRD develops new skill, knowledge and attitude of the people in the concern organizations.

- With appropriate HRD programmed, people become more committed to their jobs. People are assessed on the basis of their performance by having a acceptable performance appraisal system.

- An environment of trust and respect can be created with the help of human resource development.

- Acceptability toward change can be created with the help of HRD. Employees found themselves better equipped with problem-solving capabilities.

- It improves the all round growth of the employees. HRD also improves team spirit in the organization. They become more open in their behavior. Thus, new values can be generated.

- It also helps to create the efficiency culture In the organization. It leads to greater organizational effectiveness. Resources are properly utilized and goals are achieved in a better way.

- It improves the participation of worker in the organization. This improves the role of worker and workers feel a sense of pride and achievement while performing their jobs.

- It also helps to collect useful and objective data on employee's programs and policies which further facilitate better human resource planning.

- Hence, it can be concluded that HRD provides a lot of benefits in every organization. So, the importance of concept of HRD should be recognized and given a place of eminence, to face the present and future challenges in the organization.

Functions of human resource Management:

Managerial Function	Operative Functions
Planning	Procurement of personnel
Organizing	Development of personnel
Staffing	Compensation of personnel
Motivating	Employees benefits schemes
Controlling	Maintaining good industrial relations
	Record keeping
	Personnel planning and evaluation
	Personnel research and audit

Managerial Function:

Planning: It is concerned with manpower planning

1. To forecast future vacancies
2. To anticipate retirements promotions and transfer
3. Preparing job analysis, job description and job specifications
4. Analyzing resources of potential employees

Organizing: It is concerned with organizing manpower

1. To analysis organization structure
2. Recommending organizational changes
3. To analyze applications and determine suitability of candidates
4. Interviewing conducting test
5. Investigating references
6. Arranging medical examination

Staffing: Staffing comprises these are functions induction, transfer/promotion, Manpower development and training.

Induction: To ensure new recruits are provided with appropriate training,

1. Orienting new employees into their jobs
2. Reviewing their performances
3. Ascertaining training requirements

Transfer/Promotion: To utilize employees enhanced capabilities

1. Continuously analyzing job description

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2. Evaluating employee qualification/performance

3. Determining further training requirement

Manpower development: To provide individual employees development

1. Developing performance standards

2. Appraising performance

3. Planning individual development program Training: Training: It includes the followings

1. Conducting training program

2. Evaluating training results.

Motivating: Motivating comprises these are the functions payment recreation, communication, health and safety.

Payment: To set pay scales for different job positions and considering pay scales in other organization

1. Analyzing jobs as per job description

2. Evaluating such jobs

3. Develop scales

Recreation: To provide facilities for enjoyment

1. Conducting social activities

2. Sports and games

3. Recreational activities

Communication: To provide needed exchange of information throughout the organization.

1. Developing channels and media of information system

2. Introducing suggestion scheme

3. Conducting opinion surveys

Health and safety: Prevent diseases and provide security measures

1. Providing medical facilities

2. Providing safety measures

Controlling: Controlling comprises these are the functions performances appraisal, security, employees' attitude and coordination.

Performance appraisal: To appraise performance as per their duties and responsibilities

1. Developing performance evaluating system
2. Conducting performance evaluating interviews
3. Analyzing evaluation results

Security: To provide precautionary measure to prevent theft, fire etc.

1. To develop and implement security measures

2. To provide watchman
3. To organize fire fighting training

Employee attitude and coordination: To improve employees attitude and coordination of work.

1. Analyzing personal problems arrange consulting
2. Implement improved practices

Operative Functions:

Procurement of personnel: It deal with determination of man power requirement, their recruitment, selection, placement and orientation Development of personnel: After personnel have been obtained, they must to some degree be developed before going to work. Development has to do with the increase of skill, through training that is necessary for proper job performance.

Compensation of personnel: Compensation means, determination of adequate and equitable remuneration of personnel for their contribution to organization objectives.

Record keeping: In this system personnel manager collets and maintain information which is concerned with the staff of the organization

Personnel planning and evaluation: Under this system different types of activities are evaluated such as evaluation of performances personnel policy of an organization and its practices, personnel audit, moral survey and performance appraisal etc.

Personnel research and audit: This function is concerned with the research in motivational techniques and auditing.

Job Analysis: Job analysis can be defined as the process of identifying the tasks comprising a particular job to assess whether they could be organized in a productive manner. This will identify the main features of the job, the major tasks undertaken, the results to be achieved, and how one job is related to the other jobs in the organizational hierarchy. The product of job analysis is job description.

Job Description: Job description is an accurate and concise description of

(a) the overall purposes of the job (b) the principal duties of the person doing this job. The job

description emphasizes the job requirements. Clear job description constitutes the basis for advertising the vacancy positions and for drawing up job specifications. Once individuals are selected to the posts, job description allows them to know exactly what their roles are and what is expected of them.

Job Specification

Job specification identifies the requirements on the part of the person to perform the given job. It provides the interviewer an understanding of the job and helps him to assess the qualities necessary for its performance to an acceptable standard, at the time of interview. This helps him to compare the performance of candidates objectively and to eliminate unsuitable candidates.

Manpower Planning: It is the scientific process of evolving the right quantity of right men to be required in future at right time on the right job.

Definition: Manpower planning may be defined as a rational method of assessing the requirements of human resources at different levels in the organization. It ends with proposals for recruitment, retention, or even dismissal, where necessary.

Objectives of Manpower Planning:

1. Making correct estimate of manpower requirement
2. Managing the manpower according to the need of enterprises
3. Helps in recruitment and selection
4. Maintaining production level
5. Making employees development programme effecting
6. Establishing industrial peace
7. Reduction in labour costs
8. Minimization of labour costs.

Recruitment: Applications are invited at this stage for further scrutiny and short listing. Before advertising for the position, it common to check up of the position could be filled in internally.

Selection: The process of identifying the most suitable persons for the organization is called selection. Selection is also called a negative function because at a stage the applications are screened and short-listed based on the selection criteria. The main purpose of selection is to choose the right person for the right job. The job analysis, job description, and job specifications are carried out before the position is advertised. These provide adequate insight about nature of the job, its description, and its specification

And further focus on what type of person is to be selected for a given position. These simplify the process of selection.

Selection process involves the following stages:

    I.   Initial screening/Short listing

    II.   Comprehensive application/bio data screening

    III.   Aptitude or written rests

    IV.   Group discussion

    V.   Personal interviews

    VI.   Group discussion

    VII.   Personal interviews

    VIII.   Medical examination

    IX.   Employment offer letter

Training and development

Training: Training is short-term process of utilizing systematic and organized procedure by which the staff acquires specific technical knowledge and functional skills for a definite purpose. The focus of training is the job or task.

Training Needs:

- High turnover among the new recruits

- Increase in wastage of materials

- Increase in the number of rejected units of production

- Increase in the number of customer complaints

- Increase in the accident rate

- Reduced productivity levels

- Increase in machine breakdowns

Methods of Training: There are two methods of training

    A. On-the job training

    B. Off-the job training

A)   **On-the job training**: It is designed to make the employees immediately productive. It is learning by physically doing the work. The focus here is to provide specific skills in a real situation. These methods include:

1)Job instruction training: This is a method used for such jobs which can be performed with relatively low skill. Here, the trainees systematically acquire skills by following routine

instructions in key processes from a qualified instructor.

2) Experiential learning: This is a modern approach to the learning process. This method is more . used for training the senior executives. It is a technique, which empowers the manager-trainee with the freedom of choice to act upon and the capacity to initiate, rather than simply respond, to circumstances.

3) Demonstration: Here, the work procedures are demonstrated to the trainees. Each of the trainees is asked to carry out the work, on a sample basis, based on his/her observation and understanding of the demonstration.

4) Apprentice training: Those who are selected to work in the shop floor are trained as apprentices in the factory for a brief period ranging from three months to one year, depending upon the complexity of the training. Those who show good progress in this training are likely to be absorbed in the same organization. Those who complete apprentice training are likely to get good jobs outside also.

B) Off-the-job training methods: provide a relatively broad idea relating to a given job or task. These are meant for developing an understanding of general principles, providing background knowledge, or generating an awareness of comparative ideas and practice. These methods include:

1)   Lectures/talks and class room instructions: These techniques are designed to communicate specific interpersonal, technical, or problem-solving skills. Here, the trainer can maintain a tight control over learning. However, this method restricts the trainee's freedom to develop his/her own approaches to learning.

2)   Conferences: Conferences refer to get-together of the experts from different areas of a given topic. These experts present their views based on their work experience and research results. When employees participate in such events they get a feel of the real world. They may also get motivated to perform better.

3)   Seminars: Seminars are held periodically by the professional organizations for the benefit of all the practicing managers by taking into consideration the recent advances in a specialized area. Participation in such seminars enables the executives to get exposed to the recent developments in the area of their interest.

4)   Team discussions: This technique develops team spirit among the executives from different departments. It also enables them to understand and appreciate each other's problems. It reinforces a feeling of unity among those who work towards common goals.

5) Case study: This is a predominant technique followed even in premier management institutes. This technique helps to provide an understanding of what has gone wrong in a

particular case, such as Delhi Cloth Mills (DCM). Similarly, what are the factors responsible for the success of organizations such as Reliance or Hindustan Lever? Case study technique is a very good method of learning the principles and concepts. However, this method has one weakness. The circumstances you are likely to face in your life may be very different from the cases you have analyzed earlier! Case studies help to enhance the analytical & decision making skills.

Role-playing: The participants are assigned roles and are asked to react to one another, as they would do in their managerial jobs. These roles are eventually exchanged. In other words, each participant will get a turn to play all the roles. For instance, the role-playing in a grievance-handling situation involves two players: In the first step, the worker presents his grievance to the personnel manager. In the second step, the worker plays the role of the personnel manager while the personnel manager plays the role of the worker. Role-playing allows participants to understand problems of each other. It enhances the interpersonal-handling skills.

Programmed instruction: It is a system of instruction within which pre-established subject matter is broken into small, discrete steps and carefully organized into logical sequence in which, it can be learned by the trainee. Each step is built upon the previous one. The programmed instruction techniques can be in the form of programmed tests and manuals, or video displays. For instance, withdrawal of money through automatic teller machines (ATMs) involves responding to programmed instructions; working on a personal computer or internet involves responding to a series of programmed instructions.

Simulation exercises: These include interactive exercises in which trainees practice their skills on working models or in mock situations based on real-life situations.

Group decision-making: Group decision-making refers to the process of making decisions based on the opinions expressed by all the concerned — may be subordinates, peers, or outside consultants. The manager thus ensures that more people are involved in taking decisions. Each member of the group will accept the responsibility for the decisions made as he is a party to it. This method facilitates to generate more alternative solutions to a given problem because more people are involved in the thinking exercise. This facilitates coordination among the groups also.

Development: Development is an activity aimed at career growth rather than immediate performance. Employee development is the process, which helps him or her to understand and interpret knowledge rather than teaching a specific set of functional skills. Development, therefore, focuses more on employee's personal growth in the near future.

Placement: After training, the employee is placed in his/her position under the charge of a manager. The new recruit is allowed to exercise full authority and is held responsible for the results.

a) <u>Promotion</u>: Promotion refers to the advancement of an employee to a job with a higher authority and responsibility. It may also carry a better compensation package. Promotion can also be viewed as a means of filling up vacancies in the organization occurring from time to time.

b) <u>Demotion</u>: Where an employee is not in a position to perform a given job, he may be demoted or transferred to a position with a lower authority and salary. In other words, demotion is a punishment.

c) <u>Transfer</u>: It is a lateral shift that moves an individual employee from one position to another. It may be in the same department, or to a different department or location. This does not involve any changes in the duties, responsibilities, or skills needed. The salary benefits also may remain the same.

d) <u>Separation</u>: Separation refers to termination of employment. In other words, the employee is separated from his job. In case of misconduct or misbehavior, where the employee is not in a position to improve his performance despite notice, his/her employment is terminated. This is also called dismissal.

e) <u>Absenteeism</u>: Absenteeism refers to the practice of an employee who does not report to work for any particular reason. Absenteeism affects the productivity adversely. It becomes difficult for the departments to cope up with the work pressures, if any particular employee is absent. As a measure of control, the employees are not allowed to be absent without prior permission from the management.

<u>Wages and Salary Administration</u>: Wages and salary administration is the process of fixing wages/salary for different jobs in the organization through job evaluation, negotiations with the unions, and so on.

<u>Grievance Handling</u>: A complaint from employees, when ignored, takes the form of a grievance. Grievance is a complaint genuine or otherwise, about any issue relating to the job such as about supervisor, wages, working conditions and so on. It is necessary to create an in-build mechanism to redress the grievances, at the earliest, at the departmental level. If the individual grievances are ignored, they may take the form of industrial disputes.

A grievance is any dissatisfaction or feeling of injustice having connection with one's employment situation which is brought to the attention of management. Speaking broadly, a grievance is any dissatisfaction that adversely affects organizational relations and productivity. To understand what a grievance is, it is necessary to distinguish between dissatisfaction, complaint, and grievance.

- Dissatisfaction is anything that disturbs an employee, whether or not the unrest is expressed in words.

- Complaint is a spoken or written dissatisfaction brought to the attention of the supervisor or the shop steward.

- Grievance is a complaint that has been formally presented to a management representative or to a union official.

- According to Michael Jucious, 'grievance is any discontent or dissatisfaction whether expressed or not, whether valid or not, arising out of anything connected with the company which an employee thinks, believes or even feels to be unfair, unjust or inequitable'.

- In short, grievance is a state of dissatisfaction, expressed or unexpressed, written or unwritten, justified or unjustified, having connection with employment situation.

Features of Grievance:

1. A grievance refers to any form of discontent or dissatisfaction with any aspect of the organization.

2. The dissatisfaction must arise out of employment and not due to personal or family problems.

3. The discontent can arise out of real or imaginary reasons. When employees feel that injustice has been done to them, they have a grievance. The reason for such a feeling may be valid or invalid, legitimate or irrational, justifiable or ridiculous.

4. The discontent may be voiced or unvoiced, but it must find expression in some form. However, discontent per se is not a grievance. Initially, the employee may complain orally or in writing. If this is not looked into promptly, the employee feels a sense of lack of justice. Now, the discontent grows and takes the shape of a grievance.

5. Broadly speaking, thus, a grievance is traceable to be perceived as non-fulfillment of one's expectations from the organization.

Causes of Grievances:

Grievances may occur due to a number of reasons:

1. Economic:

Employees may demand for individual wage adjustments. They may feel that they are paid less when compared to others. For example, late bonus, payments, adjustments to overtime pay, perceived inequalities in treatment, claims for equal pay, and appeals against performance- related pay awards.

2. Work environment:

It may be undesirable or unsatisfactory conditions of work. For example, light, space, heat, or poor physical conditions of workplace, defective tools and equipment, poor quality of material, unfair rules, and lack of recognition.

3. Supervision:

It may be objections to the general methods of supervision related to the attitudes of the supervisor towards the employee such as perceived notions of bias, favoritism, nepotism, caste affiliations and regional feelings.

4. Organizational change:

Any change in the organizational policies can result in grievances. For example, the implementation of revised company policies or new working practices.

5. Employee relations:

Employees are unable to adjust with their colleagues, suffer from feelings of neglect and victimization and become an object of ridicule and humiliation, or other inters- employee disputes.

6. Miscellaneous:

These may be issues relating to certain violations in respect of promotions, safety methods, transfer, disciplinary rules, fines, granting leaves, medical facilities, etc.

Effects of Grievance:

Grievances, if not identified and redressed, may adversely affect workers, managers, and the organization.

The effects are the following:

1. On the production:

a. Low quality of production

b. Low productivity

c. Increase in the wastage of material, spoilage/leakage of machinery

d. Increase in the cost of production per unit

2. On the employees:

a. Increase in the rate of absenteeism and turnover

b. Reduction in the level of commitment, sincerity and punctuality

c. Increase in the incidence of accidents

d. Reduction in the level of employee morale.

3. On the managers:

a. Strained superior-subordinate relations.

b. Increase in the degree of supervision and control.

c. Increase in indiscipline cases

d. Increase in unrest and thereby machinery to maintain industrial peace

Need for a Formal Procedure to Handle Grievances:

A grievance handling system serves as an outlet for employee frustrations, discontents, and gripes like a pressure release value on a steam boiler. Employees do not have to keep their frustrations bottled up until eventually discontent causes explosion.

The existence of an effective grievance procedure reduces the need of arbitrary action by supervisors because supervisors know that the employees are able to protect such behavior and make protests to be heard by higher management. The very fact that employees have a right to be heard and are actually heard helps to improve morale. In view of all these, every organization should have a clear-cut procedure for grievance handling.

Performance Appraisal: Performance appraisal is the process of measuring and evaluating the performance or accomplishments, including behaviour, of an employee on the job front for a given period. The purpose is to assess the worth and value of a person to the organization. It is also meant for assessing his/her potential for future development in an objective manner.

Why appraise the performance:

1. To assess the employee's present level of performance
2. To identify the strengths or weaknesses of individual employee
3. To provide feedback to the employee so that he can improve his/her performance
4. To provide an objective basis for rewarding the employees for their performance
5. To motivate those employees who perform
6. To check and punish those employees who fail to perform
7. To identify the gaps in performance, and thus, assess training and development needs
8. To identify the employee's potential to perform
9. To provide a database for evolving succession strategies
10. To provide a basis for many other decisions such as fixation of incentives or increment, regularization or confirmation of the services of the employee, promotion, transfer or demotion.

Steps in performance Appraisal**:**

1. Create set up performance standards
2. Mutually set identifiable and measurable
3. Measure present level of performance
4. Compare and appraise present level of performance with standard
5. Discuss the appraisal with employee
6. Identify and initiate the corrective action

Job Evaluation: An attempt to determine and compare the demands which the normal

performance of particular job makes on normal workers without taking account of the individual abilities or performance of workers concerned. It rates the job not the rank.

Objectives:

1. To establish correct wage correct wage differentials for all jobs with in the factory
2. To bring new jobs into their proper relatively with jobs previously established
3. To help clarify lines of authority, responsibility and promotion
4. To accomplish the foregoing by means of the facts and principles, which can be readily explained to and accepted by all concerned
5. To establish a general wage level for a given factory which will have parity with those of neighboring factories

Advantages:

1. It is simple, inexpensive and expeditions
2. It is easily understood and easily administered
3. It helps setting better rates than the arbitrary rates based purely an judgment and experience
4. Same unions prefer it, because it leases more room for bargaining.

Disadvantages:

1. Job may be ranked on the basis of incomplete inform action and without the benefits of well defined standards
2. The rank position of different jobs is likely to be influenced by the prevailing wage ranks
3. No one committee number is likely to be familiar with all the jobs

Method of Job Evaluation: It is broadly be classified as

1) Qualitative Method

2) Quantitative Method

1) Qualitative Method: It can broadly be classified as ranking or classifying the job from lowest to highest.

A)Ranking technique: In this method, the jobs in the organization are arranged in either in the ascending or descending order and numbered serially. The basis of such arrangement could be the job description in terms of duties, responsibilities, qualifications needed, relative difficulty involved in don the job, or value to the company.

Points considered:

1   Amount of work involved

2   Supervision needed

    3   Extent of responsibility required

    4   Difficulties involved in the work

    5   Work conditions required

a)   Classification Method: This is also called job-grading method. Here, the number of grades and the salary particulars for each grade are worked out first. The grades are clearly described in terms of knowledge, skill and so on.

Major steps for job evaluation:

    1. Deciding the number of grades

    2. Writing grade descriptions

    3. Identifying/listing of the jobs to be evaluated

    4. Preparing job descriptions

2) Quantitative Method: Where point values are assigned to the various demands of a job and relative value is obtained by summing all such point values.

a) Factor comparison method: Every job requires certain capabilities on the part of the person who does the job. These capabilities are considered as critical factors, which can be grouped as follows:

    Mean effort Skill

    Physical

    Responsibility

    Working conditions

Step involved in the factor comparison method:

    Identify the key jobs

    Rank the key job, factor by factor

      Apportion the salary among each factor and rank the key jobs Compare

      factor ranking of each job with its monetary ranking Develop a

      monetary comparison scale

    Evaluate non-key jobs based on the monetary comparison scale

b)   Point-rating method: There are four widely accepted factors used in the point-rating method, skill, effort, responsibility and job conditions each of these factors is divided into sub-factors

    Skills   -   1. Education and training

                                   2. Experience

		3. Judgment and initiative
Efforts	-	1. Physical
		2. Mental
Responsibility towards	-	1. Materials or product
		2. Equipment or process
		3. Safety of others
		4. Work of others

Merit Rating: Merit rating is the process of evaluating the relative merit of the person on a given job. It is an essential task of the personnel manager to distinguish the meritorious employees from the other. The data collected from this task is used for strategic decisions such as releasing an increment in pay, promotion, transfer, and transfer on promotion to a critical assignment or even discharge.

Objectives of Merit Rating:

- To determine salary increments
- To decide who has to be transferred, promoted, or demoted
- To discover the workers needs for retaining and advanced training
- To unfold the exceptional skills among the employees based on their innate potentials
- To guide and monitor the performance of those who are lagging behind.

Method of Merit Rating:

Ranking method: In this method, all the staff of a particular cadre or a department are arranged either in the ascending or the descending order in order of merit or value to the firm. Though this is a simple method, it cannot be followed where the employees in the department are many in number.

Paired comparison method: Here, every employee is compared with all others in a particular cadre in the department. By comparing each pair of employees, the rater can decide which of the employees is more valuable to the organization.

Rating scale: Here, the factors dealing with the quantity and quality of work are listed and rated. A numeric value may be assigned to each factor and the factors could be weighed in the order of their relative importance. All the variables are measured against a three or five point scale.

Forced distribution method: Here, employees are given a set of alternatives and they have to choose one, which reflects their understanding of the true nature of the job. Their thinking is conditioned by the given set of answers.

Narrative or essay method: Here, the candidate is required to narrate in an essay format his/her strengths, weaknesses, and potential to perform. Here, the candidate is not restricted

by any given set of alternatives. The candidate is free to decide what to furnish or what not to furnish.

Management by objectives (MPO): The short-term objectives standards. This method considers the actual performance as the basis mutually agreed upon by the management and the employees are used as performance for evaluation. It is a systematic method of goal setting. In addition, it provides for reviewing performance based on results rather than personality traits or characteristics. However, this is not practical at all levels and for all kinds of work in the organizations.

<p style="text-align:center">UNIT: 4 PROJECT MANAGEMENT</p>

Introduction to CPM / PERT Techniques

CPM/PERT or Network Analysis as the technique is sometimes called, developed along two parallel streams, one industrial and the other military.

CPM (Critical Path Method) was the discovery of M.R.Walker of E.I.Du Pont de Nemours & Co. and J.E.Kelly of Remington Rand, circa 1957. The computation was designed for the UNIVAC-I computer. The first test was made in 1958, when CPM was applied to the construction of a new chemical plant. In March 1959, the method was applied to maintenance shut-down at the Du Pont works in Louisville, Kentucky. Unproductive time was reduced from 125 to 93 hours.

PERT (Project Evaluation and Review Technique) was devised in 1958 for the POLARIS missile program by the Program Evaluation Branch of the Special Projects office of the U.S.Navy, helped by the Lockheed Missile Systems division and the Consultant firm of Booz-Allen & Hamilton. The calculations were so arranged so that they could be carried out on the IBM Naval Ordinance Research Computer (NORC) at Dahlgren, Virginia.

The methods are essentially **network-oriented techniques** using the same principle. PERT and CPM are basically time-oriented methods in the sense that they both lead to determination of a time schedule for the project. The significant difference between two approaches is that the time estimates for the different activities in CPM were assumed to be **deterministic** while in PERT these are described **probabilistically**. These techniques are referred as **project scheduling** techniques.

In **CPM** activities are shown as a network of precedence relationships using activity-on-node network construction

– Single estimate of activity time

– Deterministic activity times

USED IN: Production management - for the jobs of repetitive in nature where the activity time estimates can be predicted with considerable certainty due to the existence of past experience.

In **PERT** activities are shown as a network of precedence relationships using activity-on-arrow network construction

– Multiple time estimates

– Probabilistic activity times

USED IN: Project management - for non-repetitive jobs (research and development work), where the time and cost estimates tend to be quite uncertain. This technique uses probabilistic time estimates.

Benefits of PERT/CPM
- Useful at many stages of project management
- Mathematically simple
- Give critical path and slack time
- Provide project documentation
- Useful in monitoring costs

Limitations of PERT/CPM
- Clearly defined, independent and stable activities
- Specified precedence relationships
- Over emphasis on critical paths

2.2 <u>Applications of CPM / PERT</u>

These methods have been applied to a wide variety of problems in industries and have found acceptance even in government organizations. These include

☐   Construction of a dam or a canal system in a region

☐   Construction of a building or highway

☐   Maintenance or overhaul of airplanes or oil refinery

☐   Space flight

☐   Cost control of a project using PERT / COST

☐   Designing a prototype of a machine

☐   Development of supersonic planes

2.3 Basic Steps in PERT / CPM

Project scheduling by PERT / CPM consists of four main steps

1.   Planning

☐   The planning phase is started by splitting the total project in to small projects. These smaller projects in turn are divided into activities and are analyzed by the department or section.

☐   The relationship of each activity with respect to other activities are defined and established and the corresponding responsibilities and the authority are also stated.

☐   Thus the possibility of overlooking any task necessary for the completion of the project is reduced substantially.

2.   Scheduling

☐   The ultimate objective of the scheduling phase is to prepare a time chart showing the start and finish times for each activity as well as its relationship to other activities of the project.

☐   Moreover the schedule must pinpoint the critical path activities which require special attention if the project is to be completed in time.

☐   For non-critical activities, the schedule must show the amount of slack or float times which can be used advantageously when such activities are delayed or when limited resources are to be utilized effectively.

3.   Allocation of resources

☐ Allocation of resources is performed to achieve the desired objective. A resource is a physical variable such as labour, finance, equipment and space which will impose a limitation on time for the project.

☐ When resources are limited and conflicting, demands are made for the same type of resources a systematic method for allocation of resources become essential.

☐ Resource allocation usually incurs a compromise and the choice of this compromise depends on the judgment of managers.

4. **Controlling**

☐ The final phase in project management is controlling. Critical path methods facilitate the application of the principle of management by expectation to identify areas that are critical to the completion of the project.

☐ By having progress reports from time to time and updating the network continuously, a better financial as well as technical control over the project is exercised.

☐ Arrow diagrams and time charts are used for making periodic progress reports. If required, a new course of action is determined for the remaining portion of the project.

2.4 The Framework for PERT and CPM

Essentially, there are six steps which are common to both the techniques. The procedure is listed below:

I. Define the Project and all of its significant activities or tasks. The Project (made

up of several tasks) should have only a single start activity and a single finish activity.

II. Develop the relationships among the activities. Decide which activities must precede and which must follow others.

III.   Draw the "Network" connecting all the activities. Each Activity should have unique event numbers. Dummy arrows are used where required to avoid giving the same numbering to two activities.

IV.   Assign time and/or cost estimates to each activity

V.   Compute the longest time path through the network. This is called the critical path.

VI.   Use the Network to help plan, schedule, and monitor and control the project.

The Key Concept used by CPM/PERT is that a small set of activities, which make up the longest path through the activity network control the entire project. If these "critical" activities could be identified and assigned to responsible persons, management resources could be optimally used by concentrating on the few activities which determine the fate of the entire project.

Non-critical activities can be replanned, rescheduled and resources for them can be reallocated flexibly, without affecting the whole project.

Five useful questions to ask when preparing an activity network are:

- ☐ Is this a Start Activity?
- ☐ Is this a Finish Activity?
- ☐ What Activity Precedes this?
- ☐ What Activity Follows this?
- ☐ What Activity is Concurrent with this?

2.5 Network Diagram Representation

In a network representation of a project certain definitions are used

1. Activity

Any individual operation which utilizes resources and has an end and a beginning is called activity. An arrow is commonly used to represent an

activity with its head indicating the direction of progress in the project. These are classified into four categories

1. **Predecessor activity** – Activities that must be completed immediately prior to the start of another activity are called predecessor activities.
2. **Successor activity** – Activities that cannot be started until one or more of other activities are completed but immediately succeed them are called successor activities.
3. **Concurrent activity** – Activities which can be accomplished concurrently are known as concurrent activities. It may be noted that an activity can be a predecessor or a successor to an event or it may be concurrent with one or more of other activities.
4. **Dummy activity** – An activity which does not consume any kind of resource but merely depicts the technological dependence is called a dummy activity.

The dummy activity is inserted in the network to clarify the activity pattern in the following two situations

☐ To make activities with common starting and finishing points distinguishable

☐ To identify and maintain the proper precedence relationship between activities

That is not connected by events.

For example, consider a situation where A and B are concurrent activities. C is dependent on A and D is dependent on A and B both. Such a situation can be handled by using a dummy activity as shown in the figure.
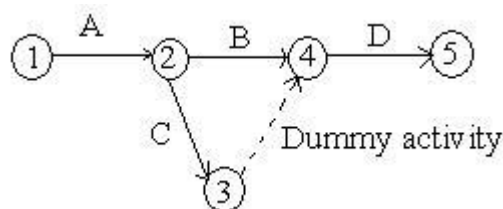

2. Event

An event represents a point in time signifying the completion of some activities and the beginning of new ones. This is usually represented by a circle in a network which is also called a node or connector.

The events are classified in to three categories

1. **Merge event** – When more than one activity comes and joins an event such an event is known as merge event.
2. **Burst event** – When more than one activity leaves an event such an event is known as burst event.
3. **Merge and Burst event** – An activity may be merge and burst event at the same time as with respect to some activities it can be a merge event and with respect to some other activities it may be a burst event.

Merge event   Burst event   Merge and Burst event
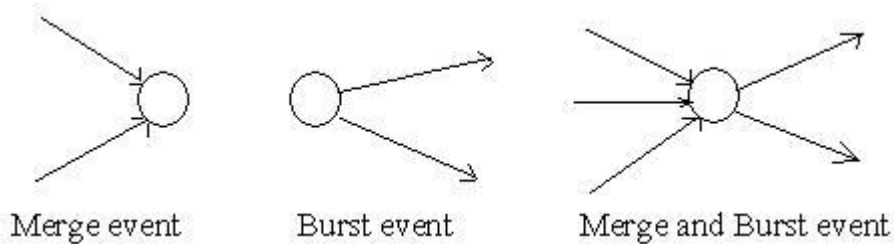
3. Sequencing

The first prerequisite in the development of network is to maintain the precedence relationships. In order to make a network, the following points should be taken into considerations

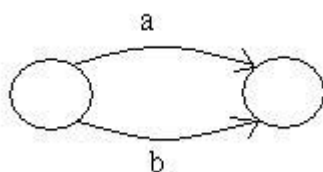- What job or jobs precede it?
- What job or jobs could run concurrently?
- What job or jobs follow it?
- What controls the start and finish of a job?

Since all further calculations are based on the network, it is necessary that a network be drawn with full care.

2.6 Rules for Drawing Network Diagram

Rule 1

Each activity is represented by one and only one arrow in the network

Rule 2

No two activities can be identified by the same end events
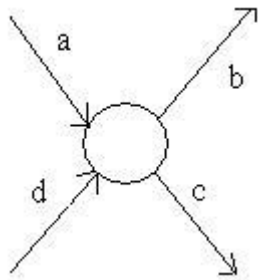
Rule 3

In order to ensure the correct precedence relationship in the arrow diagram, following questions must be checked whenever any activity is added to the network

☐ What activity must be completed immediately before this activity can start?

☐ What activities must follow this activity?

☐ What activities must occur simultaneously with this activity?

In case of large network, it is essential that certain good habits be practiced to draw an easy to follow network

☐ Try to avoid arrows which cross each other

☐ Use straight arrows

☐ Do not attempt to represent duration of activity by its arrow length

☐ Use arrows from left to right. Avoid mixing two directions, vertical and standing arrows may be used if necessary.

☐ Use dummies freely in rough draft but final network should not have any redundant dummies.

☐ The network has only one entry point called start event and one point of emergence called the end event.

1.7 Common Errors in Drawing Networks

The three types of errors are most commonly observed in drawing network diagrams

1. Dangling

To disconnect an activity before the completion of all activities in a network diagram is known as dangling. As shown in the figure activities (5 – 10) and (6 – 7) are not the last activities in the network. So the diagram is wrong and indicates the error of dangling
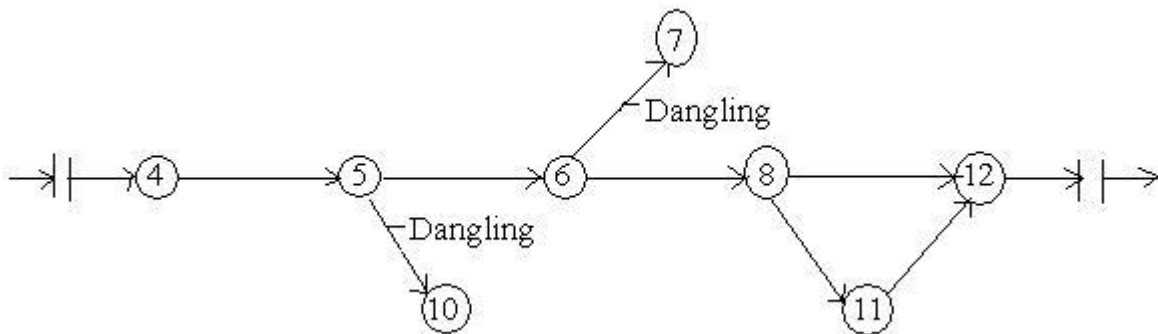
2. Looping or Cycling

Looping error is also known as cycling error in a network diagram. Drawing an endless loop in a network is known as error of looping as shown in the following figure.
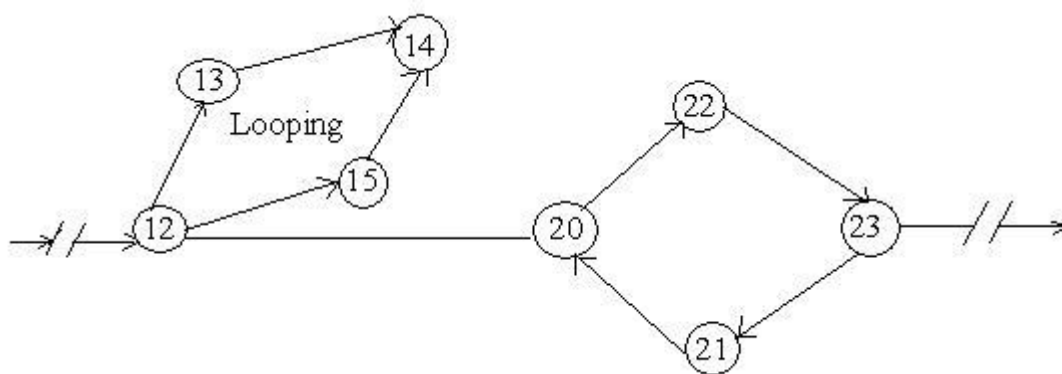
Redundancy

Unnecessarily inserting the dummy activity in network logic is known as the error of redundancy as shown in the following diagram

2.8 Advantages and Disadvantages

PERT/CPM has the following advantages

- A PERT/CPM chart explicitly defines and makes visible dependencies (precedence relationships) between the elements,

- PERT/CPM facilitates identification of the critical path and makes this visible,

- PERT/CPM facilitates identification of early start, late start, and slack for each activity,

- PERT/CPM provides for potentially reduced project duration due to better understanding of dependencies leading to improved overlapping of activities and tasks where feasible.

PERT/CPM has the following disadvantages:

- There can be potentially hundreds or thousands of activities and individual dependency relationships,

- The network charts tend to be large and unwieldy requiring several pages to print and requiring special size paper,

- The lack of a timeframe on most PERT/CPM charts makes it harder to show status although colours can help (e.g., specific colour for completed nodes),

- When the PERT/CPM charts become unwieldy, they are no longer used to manage the project.

2.9 Critical Path in Network Analysis

Basic Scheduling Computations

The notations used are

(i, j) = Activity with tail event i and head event j

E_i = Earliest occurrence time of event i

L_j = Latest allowable occurrence time of event j

D_{ij} = Estimated completion time of activity (i, j)

$(Es)_{ij}$ = Earliest starting time of activity (i, j)

$(Ef)_{ij}$ = Earliest finishing time of activity (i, j)

$(Ls)_{ij}$ = Latest starting time of activity (i, j)

$(Lf)_{ij}$ = Latest finishing time of activity (i, j)

The procedure is as follows

1. **Determination of Earliest time (E_j): Forward Pass computation**

   □ **Step 1**

   The computation begins from the start node and move towards the end node. For easiness, the forward pass computation starts by assuming the earliest occurrence time of zero for the initial project event.

   □ **Step 2**

   i. Earliest starting time of activity (i, j) is the earliest event time of the tail end event i.e. $(Es)_{ij} = E_i$

   ii. Earliest finish time of activity (i, j) is the earliest starting time + the activity time i.e. $(Ef)_{ij} = (Es)_{ij} + D_{ij}$ or $(Ef)_{ij} = E_i + D_{ij}$

   iii. Earliest event time for event j is the maximum of the earliest finish times
   of all activities ending in to that event i.e. $E_j = \max [(Ef)_{ij}$ for all immediate predecessor of (i, j)] or $E_j = \max [E_i + D_{ij}]$

2. **Backward Pass computation (for latest allowable time)**

   □ **Step 1**

   For ending event assume E = L. Remember that all E's have been computed by forward pass computations.

   □ **Step 2**

   Latest finish time for activity (i, j) is equal to the latest event time of event j i.e. $(Lf)_{ij} = L_j$

   □ **Step 3**

   Latest starting time of activity (i, j) = the latest completion time of (i, j) – the activity time or $(Ls)_{ij} = (Lf)_{ij} - D_{ij}$ or $(Ls)_{ij} = L_j - D_{ij}$

   □ **Step 4**

   Latest event time for event 'i' is the minimum of the latest start time of all activities originating from that event i.e. $L_i = \min [(Ls)_{ij}$ for all immediate successor of (i, j)] = $\min [(Lf)_{ij} - D_{ij}] = \min [L_j - D_{ij}]$

3. Determination of floats and

slack times There are three

kinds of floats

☐ **Total float** – The amount of time by which the completion of an activity could be delayed beyond the earliest expected completion time without affecting the overall project duration time.

Mathematically

$(Tf)_{ij}$ = (Latest start – Earliest start) for activity (i – j)

$(Tf)_{ij} = (Ls)_{ij} - (Es)_{ij}$ or $(Tf)_{ij} = (L_j - D_{ij}) - E_i$

☐ **Free float –** The time by which the completion of an activity can be delayed beyond the earliest finish time without affecting the earliest start of a subsequent activity.

Mathematically

$(Ff)_{ij}$ = (Earliest time for event j – Earliest time for event i) – Activity time for (i,j)

$$(Ff)_{ij} = (E_j - E_i) - D_{ij}$$

☐ **Independent float** – The amount of time by which the start of an activity can be delayed without effecting the earliest start time of any immediately following activities, assuming that the preceding activity has finished at its latest finish time.

Mathematically

$(If)_{ij} = (E_j - L_i) - D_{ij}$

The negative independent float is always taken as zero.

☐ **Event slack** - It is defined as the difference between the latest event and earliest event times.

Mathematically

Head event slack = $L_j - E_j$, Tail event slack = $L_i - E_i$

4.   Determination of critical path

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□ **Critical event** – The events with zero slack times are called critical events. In other words the event i is said to be critical if $E_i = L_i$

 □ **Critical activity** – The activities with zero total float are known as critical activities. In other words an activity is said to be critical if a delay in its start will cause a further delay in the completion date of the entire project.

 □ **Critical path** – The sequence of critical activities in a network is called critical path. The critical path is the longest path in the network from the starting event to ending event and defines the minimum time required to complete the project.

Exercise

1. What is PERT and CPM?

2. What are the advantages of using PERT/CPM?

3. Mention the applications of PERT/CPM

4. Explain the following terms

   a. Earliest time

   b. Latest time

   c. Total activity slack

   d. Event slack

   e. Critical path

5. Explain the CPM in network analysis.

6. What are the rules for drawing network diagram? Also mention the common errors that occur in drawing networks.

7. What is the difference between PERT and CPM/

8. What are the uses of PERT and CPM?

9. Explain the basic steps in PERT/CPM techniques.

10. Write the framework of PERT/CPM.

Activity(i, j)	Normal Time (D_{ij})	Earliest Time		Latest Time		Float Time $(L_i - D_{ij}) - E_i$
		Start (E_i)	Finish $(E_i + D_{ij})$	Start $(L_i - D_{ij})$	Finish (L_i)	
(1, 2)	10	0	10	0	10	0
(1, 3)	8	0	8	1	9	1
(1, 4)	9	0	9	1	10	1
(2, 5)	8	10	18	10	18	0
(4, 6)	7	9	16	10	17	1

Example 1

Determine the early start and late start in respect of all node points and identify critical path for the following network.

\

Solution

Calculation of E and L for each node is shown in the network
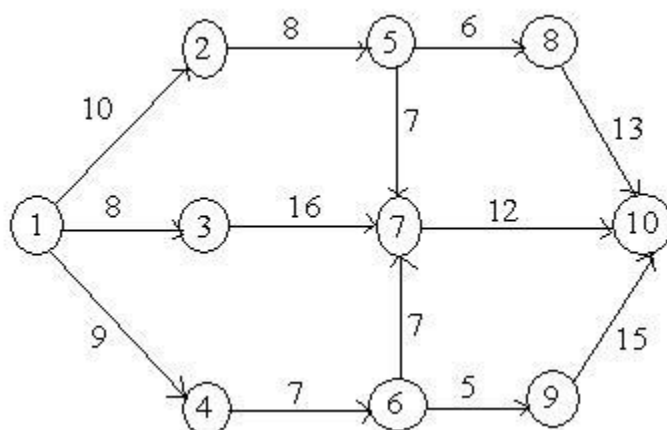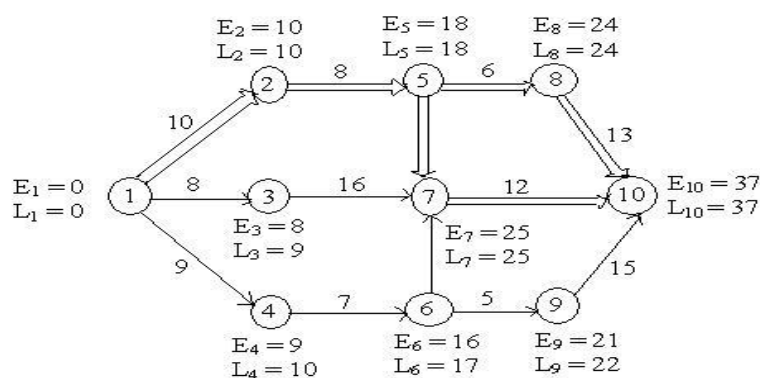
From the table, the critical nodes are (1, 2), (2, 5), (5, 7), (5, 8), (7, 10) and (8, 10)

From the table, there are two possible critical paths

    i. $1 \rightarrow 2 \rightarrow 5 \rightarrow 8 \rightarrow 10$

    ii. $1 \rightarrow 2 \rightarrow 5 \rightarrow 7 \rightarrow 10$

$E_2 = 10$ $E_5 = 18$ $E_8 = 24$
$L_2 = 10$ $L_5 = 18$ $L_8 = 24$

$E_1 = 0$ $E_{10} = 37$
$L_1 = 0$ $L_{10} = 37$

$E_3 = 8$ $E_7 = 25$
$L_3 = 9$ $L_7 = 25$

$E_4 = 9$ $E_6 = 16$ $E_9 = 21$
$L_4 = 10$ $L_6 = 17$ $L_9 = 22$
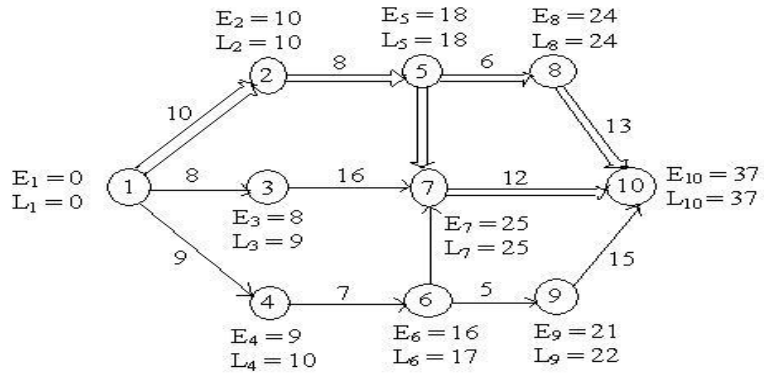
Network Analysis Table

(3, 7)	16	8	24	9	25	1
(5, 7)	7	18	25	18	25	0
(6, 7)	7	16	23	18	25	2
(5, 8)	6	18	24	18	24	0
(6, 9)	5	16	21	17	22	1
(7, 10)	12	25	37	25	37	0
(8, 10)	13	24	37	24	37	0
(9, 10)	15	21	36	22	37	1

Corporate Planning: Corporate planning refers to the process of planning undertaken by top management to achieve their organization goals.
Two significant phases incorporate planning:

Environmental Scanning

Strategy formulation and implementation

Mission is the guiding force for all the activities here. The first step in the process of achievement of the mission is to break the mission in to objectives, strategies and programs have to be formulated and implemented to achieve the given objectives which would eventually lead to the fulfillment of mission.

WHAT IS VMOGSA?

VMOGSA (Vision, Mission, Objectives, goals, Strategies, and Action Plans) is a practical planning process used to help community groups define a vision and develop practical ways to enact change. VMOGSA helps your organization set and achieve short term goals while keeping sight of your long term vision. Implementing this planning process into your group's efforts supports developing a clear mission, building consensus, and grounding your group's dreams. This section explores how and when to implement VMOGSA into your organization's planning process.

One way to make that journey is through strategic planning, the process by which a group defines its own "VMOGSA;" that is, its **V**ision, **M**ission, **O**bjectives, goals, **S**trategies, and **A**ction Plans. VMOGSA is a practical planning process that can be used by any community organization or initiative. This comprehensive planning tool can help your organization by providing a blueprint for moving from dreams to actions to positive outcomes for your community.

In this section, we will give a general overview of the process, and touch briefly on each of the individual parts. In Examples, we'll show you how an initiative to prevent adolescent pregnancy used the VMOGSA process effectively. Then, in Tools, we offer you a possible agenda for a planning retreat, should your organization decide to use this process. Finally, the remaining sections in this chapter will walk you through the steps needed to fully develop each portion of the process.

WHY SHOULD YOUR ORGANIZATION USE VMOGSA?

Why should your organization use this planning process? There are many good reasons, including all of the following:

- The VMOGSA process grounds your dreams. It makes good ideas possible by laying out what needs to happen in order to achieve your vision.
- By creating this process in a group effort (taking care to involve both people affected by the problem and those with the abilities to change it), it allows your organization to build consensus around your focus and the necessary steps your organization should take.
- The process gives you an opportunity to develop your vision and mission together with those in the community who will be affected by what you do. That means that your work is much more likely to address the community's real needs and desires, rather than what you think they might be. It also means community ownership of the vision and mission, putting everyone on the same page and greatly increasing the chances that any effort will be successful.

- VMOGSA allows your organization to focus on your short-term goals while keeping sight of your long-term vision and mission.

WHEN SHOULD YOU USE VMOGSA?

So, when should you use this strategic planning process? Of course, it always makes sense for your organization to have the direction and order it gives you, but there are some times it makes particularly good sense to use this process. These times include:

- When you are starting a new organization.
- When your organization is starting a new initiative or large project, or is going to begin work in a new direction.
- When your group is moving into a new phase of an ongoing effort.
- When you are trying to invigorate an older initiative that has lost its focus or momentum.
- When you're applying for new funding or to a new funder. It's important under these circumstances to clarify your vision and mission so that any funding you seek supports what your organization actually stands for. Otherwise, you can wind up with strings attached to the money that require you to take a direction not in keeping with your organization's real purpose or philosophy.

Let's look briefly at each of the individual ingredients important in this process. Then, in the next few sections we'll look at each of these in a more in-depth manner, and explain how to go about developing each step of the planning process.

VISION (THE DREAM)

Your vision communicates what your organization believes are the ideal conditions for your community – how things would look if the issue important to you were perfectly addressed. This utopian dream is generally described by one or more phrases or vision statements, which are brief proclamations that convey the community's dreams for the future. By developing a vision statement, your organization makes the beliefs and governing principles of your organization clear to the greater community (as well as to your own staff, participants, and volunteers).

There are certain characteristics that most vision statements have in common. In general, vision statements should be:

- Understood and shared by members of the community
- Broad enough to encompass a variety of local perspectives
- Inspiring and uplifting to everyone involved in your effort
- Easy to communicate - for example, they should be short enough to fit on a T-shirt

Here are a few vision statements which meet the above criteria:

- Healthy children
- Safe streets, safe neighborhoods
- Every house a home
- Education for all
- Peace on earth

MISSION (THE WHAT AND WHY)

Mission:

Mission or purpose: This is also called overall objective or overall goal. The mission or purpose identifies the basic function or task of an enterprises or agency or of any part of its. Every kind of organized operation has, or at least should have if it is to be meaningful, purpose or mission.

Some writes distinguish between purpose and mission. While a business for example may have a social purpose of producing and distributing goods and services. It can accomplish this by fulfilling a mission of producing certain line of products.

Developing *mission statements* are the next step in the action planning process. An organization's mission statement describes *what* the group is going to do, and *why* it's going to do that. Mission statements are similar to vision statements, but they're more concrete, and they are definitely more "action-oriented" than vision statements. The mission might refer to a problem, such as an inadequate housing, or a goal, such as providing access to health care for everyone. And, while they don't go into a lot of detail, they start to hint - very broadly - at *how* your organization might go about fixing the problems it has noted. Some general guiding principles about mission statements are that they are:

- *Concise*. Although not as short a phrase as a vision statement, a mission statement should still get its point across in one sentence.
- *Outcome-oriented*. Mission statements explain the overarching outcomes your organization is working to achieve.
- *Inclusive*. While mission statements do make statements about your group's overarching goals, it's very important that they do so very broadly. Good mission statements are not limiting in the strategies or sectors of the community that may become involved in the project.

The following mission statements are examples that meet the above criteria.

- "To promote child health and development through a comprehensive family and community initiative."
- "To create a thriving African American community through development of jobs, education, housing, and cultural pride.
- "To develop a safe and healthy neighborhood through collaborative planning, community action, and policy advocacy."

While vision and mission statements themselves should be short, it often makes sense for an organization to include its deeply held beliefs or philosophy, which may in fact define both its work and the organization itself. One way to do this without sacrificing the directness of the vision and mission statements is to include guiding principles as an addition to the statements. These can lay out the beliefs of the organization while keeping its vision and mission statements short and to the point.

OBJECTIVES (HOW MUCH OF WHAT WILL BE ACCOMPLISHED BY WHEN)

Objectives: Objective is the ends towards which activities are aimed-they are results to be achieved. They represent not only the end point of planning but the end toward which point of planning but the end toward which organizing, staffing, leading and controlling are aimed. While enterprises objectives are basic plan of firm a department may also have its own objectives

Once an organization has developed its mission statement, its next step is to develop the specific objectives that are focused on achieving that mission. Objectives refer to specific measurable results for the initiative's broad goals. An organization's objectives generally lay out how much of what will be accomplished by when. For example, one of several objectives for a community initiative to promote care and caring for older adults might be: "By 2015 (by when), to increase by 20% (how much) those elders reporting that they are in daily contact with someone who cares about them (of what)."

There are three basic types of objectives. They are:

- *Behavioral objectives*. These objectives look at changing the behaviors of people (what they are doing and saying) and the products (or results) of their behaviors. For example, a neighborhood improvement group might develop an objective around having an increased amount of home repair taking place (the behavior) or of improved housing (the result).
- *Community-level outcome objectives*. These are related to behavioral outcome objectives, but are more focused more on a community level instead of an individual level. For example, the same group might suggest increasing the percentage of decent affordable housing in the community as a community-level outcome objective.
- *Process objectives*. These are the objectives that refer to the implementation of activities necessary to achieve other objectives. For example, the group might adopt a comprehensive plan for improving neighborhood housing.

It's important to understand that these different types of objectives aren't mutually exclusive. Most groups will develop objectives in all three categories. Examples of objectives include:

- By December 2010, to increase by 30% parent engagement (i.e., talking, playing, reading) with children under 2 years of age. (*Behavioral objective*)
- By 2012, to have made a 40% increase in youth graduating from high school. (*Community -level outcome objective*)
- By the year 2006, increase by 30% the percentage of families that own their home. (*Community-level outcome objective*)
- By December of this year, implement the volunteer training program for all volunteers. (*Process objective*)

Goal: It goals naturally contribute to the attainment of enterprises objectives but the two sets of goals may entirely different.

For example: The objective of a business might be to make a certain profit by producing a given line of home entertainment equipment, while the goal of the manufacture department might be to produce the required number of television sets of given design and quality at a given cost.

STRATEGIES (THE HOW)

Strategies: "Plan of Action"

1. General programs of action and development of resources to attain comprehensive objectives.
2. The program of objectives of an organization and their changes, resources used to attain these objectives.
3. The determination of basic long-term objectives of an enterprise and adoption of courses of action and allocation of resources necessary to achieve the goals.

Strategies explain how the initiative will reach its objectives. Generally, organizations will have a wide variety of strategies that include people from all of the different parts, or sectors,

of the community. These strategies range from the very broad, which encompass people and resources from many different parts of the community, to the very specific, which aim at carefully defined areas.

Examples of broad strategies include:

- A child health program might use social marketing to promote adult involvement with children
- An adolescent pregnancy initiative might decide to increase access to contraceptives in the community
- An urban revitalization project might enhance the artistic life of the community by encouraging artists to perform in the area

Five types of specific strategies can help guide most interventions. They are:

- Providing information and enhancing skills (e.g., offer skills training in conflict management)
- Enhancing services and support (e.g., start a mentoring programs for high-risk youth)
- Modify access, barriers, and opportunities (such as offering scholarships to students who would be otherwise unable to attend college)
- Change the consequences of efforts (e.g., provide incentives for community members to volunteer)
- Modify policies (e.g., change business policies to allow parents and guardians and volunteers to spend more time with young children)

ACTION PLAN (WHAT CHANGE WILL HAPPEN; WHO WILL DO WHAT BY WHEN TO MAKE IT HAPPEN)

Finally, an organization's action plan describes in great detail exactly how strategies will be implemented to accomplish the objectives developed earlier in this process. The plan refers to: a) specific (community and systems) changes to be sought, and b) the specific action steps necessary to bring about changes in all of the relevant sectors, or parts, of the community.

The key aspects of the intervention or (community and systems) changes to be sought are outlined in the action plan. For example, in a program whose mission is to increase youth interest in politics, one of the strategies might be to teach students about the electoral system. Some of the action steps, then, might be to develop age-appropriate materials for students, to hold mock elections for candidates in local schools, and to include some teaching time in the curriculum.

Action steps are developed for each component of the intervention or (community and systems) changes to be sought. These include:

- Action step(s): What will happen
- Person(s) responsible: Who will do what
- Date to be completed: Timing of each action step
- Resources required: Resources and support (both what is needed and what's available)
- Barriers or resistance, and a plan to overcome them!
- Collaborators: Who else should know about this action

Your action plan will need to be tried and tested and revised, then tried and tested and revised again. You'll need to obtain feedback from community members, and add and subtract elements of your plan based on that feedback.

Policy: Policy a broad guideline set by the top management for the purpose of making decisions at different levels in the organization, once the corporate objectives are established policies can be formulated organization policy reflects the owner's attitude to different segments such a creditors the employees, customers and society at large.

Programmes: Programmes refer to the logical sequence of operations to be performed in a given project based on a set of goals, policies, procedures, rules and task assignments. They are used carry out a given course of action.

Purpose: A strategy is an operational tool to achieve the goals, and thus, the corporate mission. Strategies do no attempt to outline exactly how the enterprise is to accomplish its objective. A company may view downsizing in a competitive market to render cost effective services. Thus, strategy provides a frame work to guide thinking and action.

IN SUMMARY

Everyone has a dream. But the most successful individuals - and community organizations - take that dream and find a way to make it happen. VMOSA helps groups do just that. This strategic planning process helps community groups define their dream, set their goals, define ways to meet those goals, and finally, develop practical ways bring about needed changes.

In this section, you've gained a general understanding of the strategic planning process. If you believe your organization might benefit from using this process, we invite you to move on to the next sections of this chapter, which explain in some depth how to design and develop your own strategic plan.

Strategic Management Process: Strategic management is a process or series of steps. The basic steps of the strategic management process are

Identifying Corporate Mission: Identify what the organization wants to achieve to start with for the purpose of it is necessary that all concerned parties understand the overall purpose of the organization and the methods of attaining them. It is also desirable that they agree on the corporate policies of the organization.

Formulate strategic objectives: By preparing statements of mission, policy, strategy, and goals, the top management established the frame work within which its divisions or departments prepare their plans. It is essential that the members of the organization agree on these given strategic objectives. The strategic objectives thus formulated reinforce the commitment of the members of the organization to achieve the corporate goals.

Appraise internal and external environment: To evolve alternative strategies to achieve these evolve alternative strategies to achieve these goals, a detailed appraisal of both the internal and external environment is carried out. The appraisal of internal environment reveals the strengths and weakness of the firm. The appraisal of external environment reveals the opportunities and threats for the firm. It is popularly called as SWOT analysis capitalizes on internal strengths, make use of best opportunities and beware of the threats in the external environment.

Develop and evaluate alternative strategies: There could be some alternative strategies to pursue a given goals. If the goal is to expand the business, the following could be the three alternatives.

- Sold new products to the existing product line
- Finding new markets, a part from the present market territories.
- Manufacturing within the organization, the components, which were earlier procured from outside.

Similarly, if the goal is to attain stability, the alternative strategies could be to maintain the following.

-
  he existing range of products

-
  he existing markets

-
  he functions presently being carried out.

Select the best strategy: For the firm to be more successful, it is necessary to focus its strategies around its strengths and opportunities. It is a prerequisite that the numbers of the organization agree on the strategic plan. Such a plan, which has been generally agreed upon, is normally considered as the best strategy.

Establish strategic business units (SBUs): It is more strategic to define a business unit in terms of customer groups, needs and/or technology and set up the business unit accordingly. Most of companies define their businesses in term of products.

Fix target allot resources to each SBU: The development of SBUs based on appropriate finding the top level management knows that its portfolio has certain old, established relatively new, and brand new products.
Resources should be allocated based on market growth rate and relative market share of SBUs. Here resources mean executive talent money and time.

Developing operating plans: The operating plan explain how the long-term goals of the organization can be met, the corporate plans reveal how much the projected sales and revenue are where the top management finds a significance gap between the targeted sales and actual sales, it can either develop the existing business or acquire a new one to fill the gap.

Monitor performance: The results of the operating plans should be will monitored from time to time. In the case of poor performance, check up with the members of the team to find out their practical problems and sort these out. Also, it is essential to verify whether there are any gaps in formulating the operating/tactical plans.

Revise the operating plans, where necessary: It is necessary to rise the operational plans particularly when the firm does not perform as well as expected. The planes can be revised in terms of focus, resource or time frame.

Environment scanning process

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                    ┌─────────────────────────┐
                    │   Corporate Planning     │
                    └───────────┬─────────────┘
                                │
                    ┌───────────▼─────────────┐
                    │  Environmental scanning  │
                    └───────────┬─────────────┘
                                │
                    ┌───────────▼─────────────┐
                    │     Environmental        │
                    │     analysis             │
                    └───────────┬─────────────┘
                                │
                    ┌───────────▼─────────────┐
                    │  Environmental diagnosis │
                    └─────────────────────────┘
```

| External Environment | | | Internal Environment |

- General Environment
- Industry Environmen
- International Environment

- Functional area profit
- Evaluation
- Strategic
- Strength and Weakness

advantage profile

Opportunity and Threats
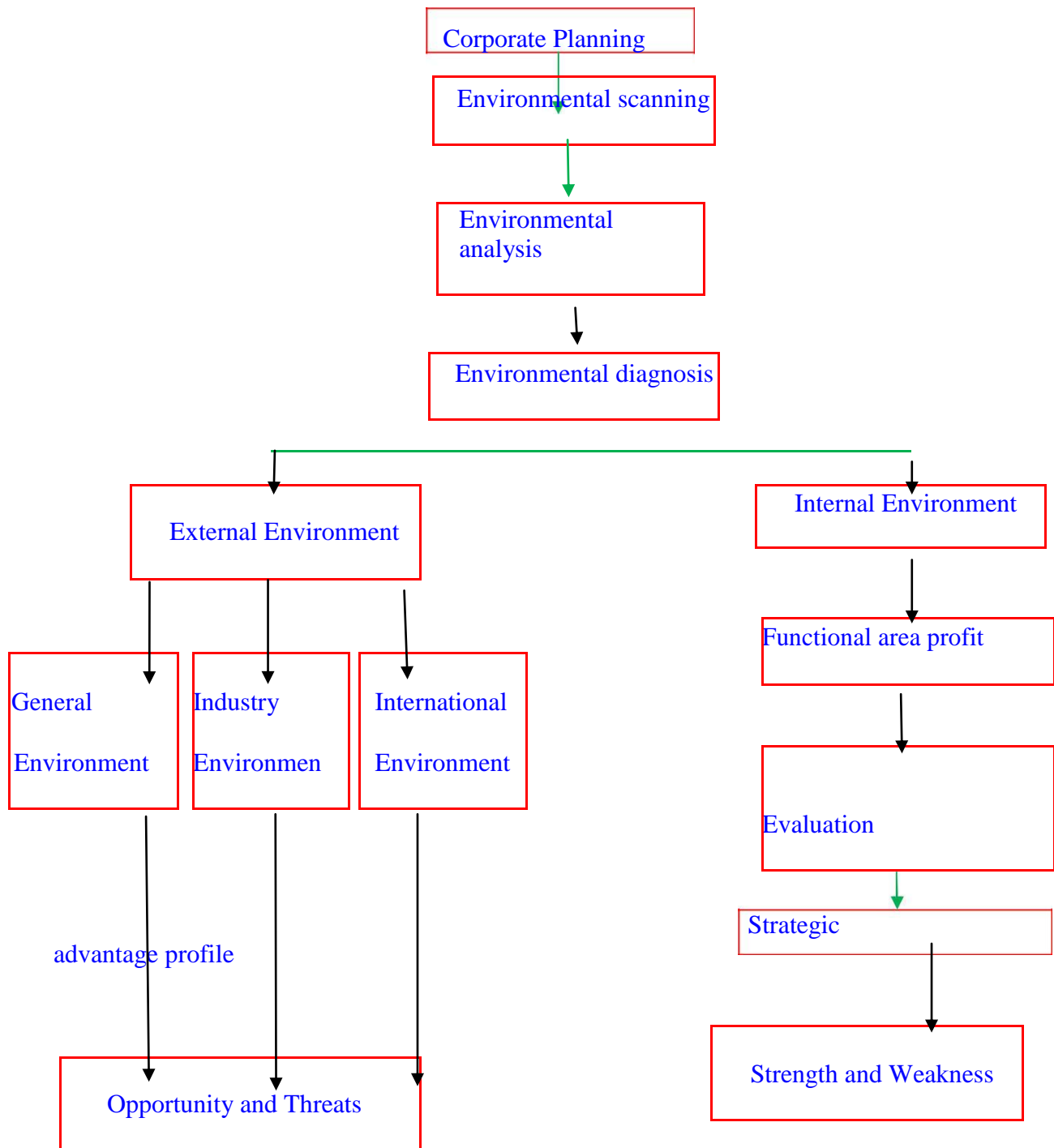
Environmental Scanning: Environmental scanning is a vital part of the corporate planning process. Effective planners try to anticipate what is likely to happen or attempt to influence the environment in favourable directions. This requires long-term strategic vision and commitments to corporate planning.

:
The banks and business enterprises in the public sector are being disinvested by the government. The government policies keeping changing the current focus of the government of India has been an globalization, privatization, deregulation. As a result foreign goods are being dumped into the markets.

Computers have wiped out the market for typewriters and electronic type writers.

Info-tech industry, which was very strong for over decades, suddenly revealed downtrend.

The advent of television channels has almost zeroed down the market for VCR and significantly affected the flow of film viewer traffic.

Environmental analysis: Refers to the process of analyzing the environment, component-wise or sector-wise to provide a basis for further diagnosis. It inter relates the formation of objectives, generation of alternative strategies, and other related issues.

Environmental diagnosis: Comprises the managerial decisions based on the perceived opportunities and threats of the firm. In effect, it helps to determine the nature of the impending tasks to take advantage of opportunity or to effectively manage threat.

1.General environment: A firm is said to be more effective when its strategy caters to the needs effective when its strategy caters to the needs of the environment. The additional features added to the main product at times could provide a new life to the main product. The corporate units, which realize this, will survive in the long-run.

Thus, the major causes of growth, decline, and other large scale changes in firms are the factor in the external environment, not internal development.

- Socio-economic sector
- The technological sector
- The government sector

2.Industry environment: It is an important component of the overall environmental analysis as input for corporate planning. Industry refers to the group of firms carrying on similar activity. It has three sectors, customers, suppliers and competitors.

Customers: The strategist must identify and analyze the customers for the organization locates the potential customers and the emerging changes in their buying pattern. It is necessary to identify the profile of buyers in terms of their needs and preferences based on the basic demographic factors such as age, income size of household and consumption pattern. These factors create the primary demand for products or service and help to scan the geographical environment for potential market and customers.

Suppliers: Strategist also must determine the availability and costs of supply condition including raw materials, energy, prevailing technology, money and labor. The supplier can

influence a firm and its strategy, particularly when the firm is outsourcing its logistic requirements.

Competition: The strategist moulds his strategy in the light of the competitor's strategy, the exit or entry of competitors to be analyzed and diagnosed.

3. International Environment: The strategy of globalization implies a great source of opportunities and also threats to business firms. Such firms, which an make use of the opportunities, would flourish and those, which cannot gear up, would demise.

Internal Environment analysis and diagnosis: Internal environmental analysis and diagnosis is a process of analyzing and diagnosing the firm's internal strengths and weaknesses. By identifying its strength and weaknesses, the firm can strategically exploit the available opportunities, overcome threats, and correct weaknesses placing itself at a competitive advantage.

Conducting internal analysis and diagnosis: Identify first the internal strength and weaknesses. The strength and weaknesses may include the following.

- Marketing factors
- research and development
- Engineering design and management
- Production management
- Managerial personnel
- Accounting and financial policies and procedures.

Profile of research and development:

➢ Financial resources (budget to conduct research, to develop new products and processes, improve existing processes and so on)
➢ Infrastructure (in terms of state-of-the-art technologies)
➢ Human resources (how many scientist and engineers are required, presently available, turnover of key personnel)
➢

Organizational system (system to monitor technological developments from time to time)

Strategy advantage profile: The ultimate result of such a detailed internal analysis to build a strategic advantage profile strategic advantage profile is a tool used to evaluate systematically the enterprises internal factors the competitive strengths or weaknesses for each internal area such as marketing, R &D and others

SWOT Analysis: SWOT analysis is defined as the rational and overall evaluation of a company's strength, weakness, opportunities, and threats which are likely to affect the strategic choice significantly.

External environment analysis (Opportunities and Threats): The external environment has a profound impact on the business operations irrespective of the nature and size of the business. The business has to monitor its key macro-environment forces and micro economic parties.

Opportunities: It necessary should identify what opportunities are available to it to focus upon. The latest technology, deregulated or free markets, liberalized rules and regulations and other may make a lot of difference for a business organization provided it can envision how to avail these visionary identify opportunities from treats.

Threats: Some development in the external environment represents threats. A threat is a challenge posed by an unfavorable trend or a development that results in the loss of sales or profit till a defensive marketing action is initiated. A few example of threat could be outlined as change in government policy such as liberalization privatization and globalization, changing technology changing value systems environmental constraints law and order.

Internal environment analysis (Strength and Weakness): It is necessary to analyze one's own strength and weakness periodically to sustain the degree of its competitive strength. Generally top management or an outside consultant reviews competencies pertaining to marketing, financial, manufacturing and organizational system and rates each factor as a major strength, minor strength, mental, factor, minor weakness, or major weakness.

Strength: It is not necessary that a business organization has to correct all its weakness nor that its propagate its strength. The big question is whether the business should limit itself to those opportunities, where its possesses the required strength or should it consider better opportunities where it might have to develop certain strength.

Weakness: Some times the company may not do well not because its departments lack the required motivation but because they do not work together as a team for example consider the case of an electronics company which employs engineers, sales and service staff for its operations. It is not adequate if they keep on doing their work. The organization becomes more effective only when they work as a team. It is therefore, critically important to build effective teams and assess the effectiveness of these teams. This is a part of the internal environmental audit. Progressive companies adopt this strategy.

STRENGTHS	WEAKNESS:
1. Value for money programme 2. Pool of trained faculty 3. Wide choice of offering 4. National network of well equipped training centre	1. Not aggressive in selling 2. Course differentials not sharp 3. Counselor enthusiasm in adequate 4. Customers service not focused enough
OPPORTUNITIES:	**THREATS:**
1. Growing demand for computer education 2. Computer library becoming a necessity 3. Growth of rich training needs 4. Need for customized training modules.	1. Rise in number of competitions 2. High rate of technological obsolescence 3. Commoditization of training under cutting of fees.

Strategy Formulation: This is often referred as strategic planning or long-range planning. This process is primarily analytical, not action-oriented. The strategy formulation process is concerned with developing a corporate mission, objectives, strategy and policy.

This process involves scanning external and internal environmental factors, analysis of the strategic factors and generation, evaluation, selection of the best alternative strategy appropriate to the analysis.

Henry Mint berg has pointed out that corporations objectives and strategies are strongly affected by top management's view of the world. This view determines the mode to be used in strategy formulation. These modes includes

Entrepreneurial mode: one powerful individual formulates Strategy.
The focus is on opportunities rather than on problems.
Strategy is guided by the founder's own vision of direction.
Adaptive Mode: This strategy formulation mode is characterized by reactive solutions to existing problems rather than a proactive search for new opportunities.

Planning Mode: Analysts assume main responsibility for strategy formulation.

Strategic planning includes both the practice search for new opportunities and the reactive solution of existing problems.

Thus, strategy formulation process involves environmental analysis organizational analysis, development of strategic alternatives and analysis and selecting the most appropriate strategy from the alternatives developed. The corporate level strategies include:

Stability strategies Growth strategies
Retrenchment strategies
Combination strategy or port-folio restructuring

<u>Implementation of strategies</u>:

Institutionalization of strategy
Setting proper organizational climate
Developing appropriate operating plans

Developing appropriate organizational structures Periodic review of strateg

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UG Model question paper Management Science
2018-19

Time: 3 hours   **Max Marks: 70**

Note: This question paper contains of 5 sections. Answer five questions, choosing
one question from each section and each question carries 14 marks.

SECTION-I
6) a) Explain functions of management.
   b) Explain about contributions of human relation period.   [7 +7M]

OR

5. a) Differentiate management, organization and administration.
   b)Define leadership.
   c) Define scientific management.   [7 +3+4M]

SECTION-II
3 a) Differentiate between organization and organizing.
   b) Evaluate line and staff organization.   [7+7M]

OR

4 a) Explain marketing strategies based on product life cycle.
   b) Define Economic Order Quantity.
   c) Define ABC analysis

[7+3+4M]

SECTION-III
5. a)What are the functions of HR manager?
    b) What do you understand by grievance handling?   [7 +7M]

OR

6. a)What do you understand by management by objectives?
   b) What is link between job evaluation and wage and salary administration   [7+7M]

SECTION-IV
7. a) What is project crashing? Explain probability of completing project within time.

   b) Explain the nature of costs in a project.

OR   pollution .   [10+4M]

8 a) Explain rules of drawing networks   –
   b) Define PERT and CPM.

[7 +7M]

SECTION-V
9.a) Identify and discuss the stages in the process of strategy formulation and
implementation.
   b) Explain international environment.   [10 +4M]

OR

10 a) What do you understand by SWOT analysis?
   b) Explain TQM, JIT,
   c) Explain ERP, BPO.   [6+4+4M]

Previous question papers

Time: 3 hours   Max. Marks: 75

PART- A (25 Marks)

Answer all the questions   **25 marks**

1. A) Define management.
   B) Explain concepts of management.
   C) Define HRD. What are the various activities in it?
   D) What is MBO? How it will be used in performance appraisal.
   E) Write about critical path.
   F) Explain rules for drawing networks.
   G) Define corporate planning process.
   H) Explain about micro environment.
   I) Explain any four features of Management.
   J) Define Process Control & Acceptance Sampling.

Section-B   **5x10=50**

2. Define Management and explain the functions of Management.
                                        Or
3. What is the importance of Management in the present business scenario?
4. Discuss the various Organizational Structures.
                                        Or
5. Explain the Marketing Mix.
                                        Or
6. What are the differences between PM and HRM?
                                        Or
7. Explain the significance of manpower planning?
8. Differentiate between PERT and CPM?
                                        Or
9. Explain the steps involved in probability of completing the project with in given time?
10. Explain the significance of environmental analysis?
                                        Or
11. Explain the steps in Strategy formulation and implementation?

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
B.Tech III year – I Semester Examinations, Model Paper-2
MANAGEMENT SCIENCE

Time: 3 hours   Max. Marks: 75

PART- A (25 Marks)

Answer all the questions   **25 marks**

1.
    A. Differentiate Leader vs. manager.
    B. Explain different types of leaderships.
    C. Why is Management considered as both an Art & Science?
    D. Determine EOQ.
    E. What is induction? Explain its importance?
    F. Differentiating training and development.
    G. What is slack? Explain about it.
    H. What is cost slope?
    I. Goals vs. objectives.
    J. Generic strategic alternatives.

Section-B   5x10=50

2. Explain various principles of management.
Or
3. Explain different need levels in Maslow's motivation theory.
4. Explain the various Leadership Theories.
Or
5. Explain
   A) Functions of marketing.
   B) Importance of marketing mix.
6. What are the challenges faced by HR manager in the organization.
Or
7. What is job evaluation? Explain various methods of job evaluation.
8. Write about different time estimates.
Or
9. Write about different types of floats.

10. Explain about strategy variations.
Or
11. Explain different elements of corporate planning process

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B.Tech III year – I Semester Examinations, Model Paper-3
MANAGEMENT SCIENCE

Time: 3 hours   Max. Marks: 75

PART- A (25 Marks)
Answer all the questions   **25 Marks**

1. **A)** Management vs. administration.
   B) Theory-X Vs. Theory-Y
   C) Selling vs. marketing.
   D) Significance of ABC analysis.
   E) Define Process Control & Acceptance Sampling.
   F) Differentiate wages and salaries.
   G) Activity vs event.
   H) Explain about Quality Circles.
   I) Explain role of SBUs.
   J) Explain importance of programmes in strategic management.

Section-B   **5x10=50 Marks**

2. Explain various social responsibilities of an organization.

Or

3. Explain various principles of organizing.

4. Explain various elements of promotion mix.

Or

5. Discuss about various types of plant layouts with its merits and demerits.

6. Define merit rating. Explain methods of merit rating.

Or

7. Define training. Explain various on-the job and off-the job training methods.

8. Draw a network for following data.

Activity	Preceding activity
A	------
B	------
C	A
D	A
E	B
F	C,D
G	D
H	D,E
I	F,G,H

Or

9. Explain significance of CPM.

10. Explain SWOT analysis.

Or

11. What is significance of strategic Alliances?

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B.Tech III year – I Semester Examinations, Model Paper-5
MANAGEMENT SCIENCE

Time: 3 hours   Max. Marks: 75

PART- A (25 Marks)
Answer all the questions   25 Marks

1.
A) Write about matrix organization.
B) Explain about team structure.
C) Explain about BPR.
D) What is importance of SQC?
E) Training vs. development.
F) Write about Job description.
G) Explain different rules for network drawing.
H) Write about different time estimates.
I) Bench marking.
J) Write about micro environment.

Section-B   5x10=50

2. What are the various modern approaches to organization structures?

Or

3. What is the significance of organization structures in the business?

4. Explain different strategies to be followed in the different stages of PLC (product life cycle).

Or

5. Explain differences between control charts for variables and control charts for attributes.

6. Why HRM has such a significant role in present scenario.

Or

7. Explain different steps in selection process.

8.

Activity	Least time(days)	Greatest time(days)	Most likely time(days)
1-2	3	15	6
1-3	2	14	5
1-4	6	30	12
2-5	2	8	5
2-6	5	17	11
3-6	3	15	6
4-7	3	27	9
5-7	1	7	4
6-7	2	8	5

a) Draw network.
b) What is the probability that the project will be completed in 27 days.

Or

9. Draw the Network and Identify the Critical Path

Activity	1-2	1-3	1-5	2-3	2-4	3-4	3-5	3-6	4-6	5-6
Duration(in weeks)	8	7	12	4	10	3	5	10	7	4

10. Write about balanced score card.

Or

11. Explain the concept of Environmental analysis.