Solution cum Scheme of Evaluation

IV/IV B. Tech (Regular) Degree Examination

14CH/EC/EE/EI 701

Industrial Management & Entrepreneurship Development

November-2019

Prepared by:

Rajasekhara babu. K,
Assistant Professor
Department of Mechanical Engineering
Bapatla Engineering College
Bapatla-522102
Mob: 8106199932
rajabecmech@gmail.com

Other Teachers:

Scheme of Evaluation

14CH/EC/EE/EI 701

Hall Ticket Number:

IV/IV B. Tech (Regular/~~Supplementary~~) DEGREE EXAMINATION

November, 2019 **Common to CH, EEE, ECE & EIE**

Seventh Semester **Industrial Management and Entrepreneurship Development**

Time: Three Hours **Maximum:** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1 Answer all questions (1X12=12 Marks)

a) What is management?
b) Define marketing
c) What is meant by partnership deed?
d) Define production management
e) Define ABC analysis
f) What is P chart?
g) Define financial management
h) What is motivation
i) Write the methods of depreciation
j) Define process design
k) What is entrepreneurship development?
l) Write any four factors affecting entrepreneurship.

UNIT I

2 a) Write the importance of management in development of an organization.
Any SIX points- 6M

b) Explain the features of sole proprietorship.
Any SIX features- 6M

(OR)

3 a) Distinguish between public and private limited companies.
Any SIX points in each- 6M

b) Write and explain about marketing mix (4 Ps) in detail.
Each 'P' should be given 1.5 Marks (4x1.5=6M)

UNIT II

4 a) Explain in detail about types of production systems.
Explanation of Each production system-2 Marks (3x2=6M)

b) From the figures given below, calculate Economic Order Quantity (EOQ) and Total cost at EOQ?

- Total consumption of material per year 10,000 kgs
- Buying / ordering cost per order Rs. 50
- Unit cost of material Rs. 2 per kg
- Carrying and storage cost 8%

Calculation of EOQ- 4Marks
Total Cost calculation-2Marks

(OR)

5 a) Explain the X-bar and R charts with an example.
Explanation of X-bar and R Charts-4 Marks
Example- 2 Marks

b) Distinguish between productivity and production.
Any THREE differences in each- 6Marks

UNIT III

6 a) Explain the different functions of finance.
Executive functions- 3Marks
Routine functions- 3 Marks

b) Describe the declining balance method of depreciation with an example.
Explanation of Declining balance Method-4 Marks
Example- 2 Marks

(OR)

7 a) Explain the recruitment and selection in detail
Explanation of Recruitment-3Marks
Explanation of Selection- 3Marks

b) Discuss the different methods of performance appraisal.
Any THREE Methods- 3x2= 6Marks

UNIT IV

8 a) Write the objectives of entrepreneurial development.
Any SIX objectives with brief explanation- 6Marks

b) Explain the entrepreneurial characteristics in detail.
Any SIX characteristics with brief explanation- 6Marks

(OR)

9 a) Discuss in detail about finance for the enterprises.
Need/Importance of finance- 2marks
Sources of finance-4Marks

b) Describe the steps in plant design.
Explanation of SIX steps in the plant design-6Marks

Detailed Scheme of Evaluation

1. 12x1=12M

a) What is management?

Management (or **managing**) is the administration of an organization, whether it be a business, a not-for-profit organization, or government body. Management includes the activities of setting the strategy of an organization and coordinating the efforts of its employees or volunteers to accomplish its objectives through the application of available resources, such as financial, natural, technological, and human resources. The term "management" may also refer to the people who manage an organization.

b) Define marketing.

The action or business of promoting and selling products or services, including market research and advertising.

c) What is meant by partnership deed?

"Partnership deed is a document containing all the matters according to which mutual rights, duties and liabilities of partners in the conduct and management of the affairs of the firm are determined"

d) Define production management.

Production management is a process of attempting to familiarize a person with concepts and techniques specific to the analysis and management of a production activity.

e) Define ABC analysis

The method of stock control classifying the stocks based on their respective value and volume is called ABC Analysis.

f) What is P chart?

In statistical quality control, the **p-chart** is a type of control chart used to monitor the proportion of nonconforming units in a sample, where the sample proportion nonconforming is defined as the ratio of the number of nonconforming units to the sample size, n

g) Define financial management

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to financial resources of the enterprise

h) What is motivation?

Motivation is a theoretical construct used to explain behavior. It gives the reasons for people's actions, desires, and needs. Motivation can also be defined as one's direction to behavior, or what causes a person to want to repeat a behavior and vice versa. A motive is what prompts the person to act in a certain way, or at least develop an inclination for specific behavior. According to Maehr and Meyer, "Motivation is a word that is part of the popular culture as few other psychological concepts are

i) Write the methods of depreciation

- Straight line method
- Declining balance method
- Sum of years' digits methods
- Machine hour basis method etc.

j) Define process design

The activity of determining the workflow, equipment needs, and implementation requirements for a process. Process design typically uses several tools including flowcharting, process simulation software, and scale models.

In chemical engineering, **process design** is the **design** of **processes** for desired physical and/or chemical transformation of materials.

k) What is entrepreneurship development?

Entrepreneurship development is the process of improving the skills and knowledge of entrepreneurs through various training and classroom programs. The whole point of entrepreneurship development is to increase the number of entrepreneurs.

l) Write any four factors affecting entrepreneurship.

- Need for achievement
- Family background
- Capital
- Education etc.

UNIT-I

2. a) Write the importance of management in development of an organization. 6M

1. **It helps in Achieving Group Goals -** It arranges the factors of production, assembles and organizes the resources, integrates the resources in effective manner to achieve goals. It directs group efforts towards achievement of pre-determined goals. By defining objective of organization clearly there would be no wastage of time, money and effort. Management converts disorganized resources of men, machines, money etc. into useful enterprise. These resources are coordinated, directed and controlled in such a manner that enterprise work towards attainment of goals.
2. **Optimum Utilization of Resources -** Management utilizes all the physical & human resources productively. This leads to efficacy in management. Management provides maximum utilization of scarce resources by selecting its best possible alternate use in industry from out of various uses. It makes use of experts, professional and these services leads to use of their skills, knowledge, and proper utilization and avoids wastage. If employees and machines are producing its maximum there is no under employment of any resources.
3. **Reduces Costs -** It gets maximum results through minimum input by proper planning and by using minimum input & getting maximum output. Management uses physical, human and financial resources in such a manner which results in best combination. This helps in cost reduction.
4. **Establishes Sound Organization -** No overlapping of efforts (smooth and coordinated functions). To establish sound organizational structure is one of the objective of management which is in tune with objective of organization and for fulfillment of this, it establishes effective authority &

responsibility relationship i.e. who is accountable to whom, who can give instructions to whom, who are superiors & who are subordinates. Management fills up various positions with right persons, having right skills, training and qualification. All jobs should be cleared to everyone.

5. **Establishes Equilibrium -** It enables the organization to survive in changing environment. It keeps in touch with the changing environment. With the change is external environment, the initial co-ordination of organization must be changed. So it adapts organization to changing demand of market / changing needs of societies. It is responsible for growth and survival of organization.
6. **Essentials for Prosperity of Society -** Efficient management leads to better economical production which helps in turn to increase the welfare of people. Good management makes a difficult task easier by avoiding wastage of scarce resource. It improves standard of living. It increases the profit which is beneficial to business and society will get maximum output at minimum cost by creating employment opportunities which generate income in hands. Organization comes with new products and researches beneficial for society.

2. b) Explain the features of sole proprietorship. 6M

SOLEPROPRIETORSHIP:

Sole means single and proprietorship means ownership. It means only one person, or an individual becomes the owner of the business. Thus, the business organization in which a single person owns, manages and controls all the activities of the business is known as sole proprietorship form of business organization.

If the capital is provided by single individual, it is known as individual ownership, single ownership or individual proprietorship.

Definition:

The business organization which is owned by a single individual and run independently with or without hired labour and machines.

As the name suggests, such type of business is owned by one man. The businessman invests capital, employs labour and machines.

This is the oldest and simplest form of business organization. In such business owner supplies all the capital needed to run the organization. Hence owner alone enjoys the profits and suffers the losses in his business.

Overall control in single hand helps him in quick decisions, efficient administration and working. In such organizations owner himself is responsible for all the liabilities.

Main Features:

The main features of sole proprietorship form of business can be listed as follows:

1. One Man Ownership: In proprietorship, only one man is the owner of the enterprise.

2. No Separate Business Entity: No distinction is made between the business concern and the proprietor. Both are one and the same.

3. No Separation between Ownership and Management: In proprietorship, management rests with the proprietor himself/herself. The proprietor is a manager also.

4. Unlimited Liability: Unlimited liability means that in case the enterprise incurs losses, the private property of the proprietor can also be utilized for meeting the business obligations to outside parties.

5. All Profits or Losses to the Proprietor: Being the sole owner of the enterprise, the proprietor enjoys all the profits earned and bears the full brunt of all losses incurred by the enterprise.

6. Less Formalities: A proprietorship business can be started without completing much legal formalities. There are some businesses that too can be started simply after obtaining necessary manufacturing licence and permits.

Generally, this type of business is small scale industry. Government provides liberal loans for starting and running these businesses. Generally, the electricity and water rate is less for small and cottage industries.

EXAMPLES:

Small shops like vegetable shops, grocery shops, telephone booths, chemist shops etc are some of the commonly found sole proprietorship form of business organizations.

3. a) Distinguish between public and private limited companies. 6M

Basis	Private Limited Company	Public Limited Company
Membership	Minimum - 02 Maximum - 50	Minimum - 07 Maximum - no restriction
Identification	Use a suffix "Private Limited" after its name	Use a suffix "Limited" after its name
Transferability of shares	Restricted	Free
Capital required	Not less than Rs. 1 lakh	Not less than Rs. 5 lakh
Raising of funds	Can not give open invitation to the public to subscribe the shares	Can raise as much money as required from public

3. b) Write and explain about marketing mix (4 Ps) in detail. (6M)

Marketing Mix: It refers to the combination of four basic elements, viz., product, price, promotion and the place, known as the four P's of marketing.

Product Mix: It is used to describe the assortment of different product types (product lines) and their varieties (product depth). In addition, different tangible and intangible features of the product also form the product mix.

Price Mix: Price mix refers to the decisions relating to the price charged for the product, service or idea.
Promotion Mix: Refers to the activities relating to promotion of the product, service or idea.

Place Mix: Place or physical distribution mix refers to the activities that are involved in transferring ownership to consumers at the right time and price.

UNIT II

4. a) Explain in detail about types of production systems. (6M)

A production manager will have to choose most appropriate method for his enterprise. The final decision regarding any method of production is very much affected by the nature of the products and the quantity to be produced. Production methods may be broadly classified as Job Production, Batch production and Mass or Flow Production.

(i) Job Production:

Under this method peculiar, special or non-standardized products are produced in accordance with the orders received from the customers. As each product is non- standardized varying in size and nature, it requires separate job for production. The machines and equipment ‘s is adjusted in such a manner so as to suit the requirements of a particular job. Job production involves intermittent process as the work is carried as and when the order is received. It consists of bringing together of material, parts and components in order to assemble and commission a single piece of equipment or product. Ship building, dam construction, bridge building, book printing is some of the examples of job production. Third method of plant layout viz., Stationery Material Layout is suitable for job production.

Characteristics:

The job production possesses the following characteristics 1. A large number of general-purpose machines are required. 2. A large number of workers conversant with different jobs will have to be employed. 3. There can be some variations in production. 4. Some flexibility in financing is required because of variations in workload. 5. A large inventory of materials, parts and tools will be required. 6. The machines and equipment setting will have to be adjusted and readjusted to the manufacturing requirements. 7. The movement of materials through the process is intermittent.

Limitations:

Job production has the following limitations: 1. The economies of large-scale production may not be attained because production is done in short runs. 2. The demand is irregular for some products. 3. The use of labour and equipment may be an inefficient. 4. The scientific assessment of costs is difficult.

(ii) Batch production:

Batch production pertains to repetitive production. It refers to the production of goods, the quantity of which is known in advance. It is that form of production where identical products are produced in batches on the basis of demand of customers ‘or of expected demand for products. This method is generally similar to job production except the quantity of production. Instead of making one single product as in case of job production, a batch or group of products are produced at one time. It should be remembered here that one batch of products may not resemble with the next batch. Under batch system of production, the work is divided into operations and one operation is done at a time. After completing the work on one operation it is passed on to the second operation and so on till the product is completed. Batch production can be explained with the help of an illustration. An enterprise wants to manufacture 20 electric motors. The work will be divided into different operations. The first operation on all the motors will be completed in the first batch and then it will pass on to the next operation. The second group of operators will complete the second operation before the next and so on. Under job production the same operators will manufacture full machine and not one operation only. Batch production can fetch the benefits of repetitive production to a large extent, if the batch is of a sufficient quantity. Thus batch production may be defined as the manufacture of a product in small or large batches or lots by series of operations, each operation being carried on the whole batch before any subsequent operation is operated. This method is generally adopted in case of biscuit and confectionery and motor manufacturing, medicines, tinned food and hardware‘s like nuts and bolts etc.

The batch production method possesses the following characteristics: 1. The work is of repetitive nature. 2. There is a functional layout of various manufacturing processes. 3. One operation is carried out on whole batch and then is passed on to the next operation and so on. 4. Same type of machines is arranged at one place. 5. It is generally chosen where trade is seasonal or there is a need to produce great variety of goods.

(iii) Mass or flow production:
This method involves a continuous production of standardized products on a large scale. Under this method, production remains continuous in anticipation of future demand. Standardization is the basis of mass production. Standardized products are produced under this method by using standardized materials and equipment. There is a continuous or uninterrupted flow of production obtained by arranging the machines in a proper sequence of operations. Process layout is best suited method for mass production units. Flow production is the manufacture of a product by a series of operations, each article going on to a succeeding operation as soon as possible. The manufacturing process is broken into separate operations. The product completed at one operation is automatically passed on to the next till its completion. There is no time gap between the work done at one process and the starting at the next. The flow of production is continuous and progressive.

Characteristics:
The mass or flow production possesses the following characteristics. 1. The units flow from one operation point to another throughout the whole process. 2. There will be one type of machine for each process. 3. The products, tools, materials and methods are standardised. 4. Production is done in anticipation of demand. 5. Production volume is usually high. 6. Machine set ups remain unchanged for a considerable long period. 7. Any fault in flow of production is immediately corrected otherwise it will stop the whole production process.

Suitability of flow/mass production:
1. There must be continuity in demand for the product. 2. The products, materials and equipments must be standardised because the flow of line is inflexible. 3. The operations should be well defined. 4. It should be possible to maintain certain quality standards. 5. It should be possible to find time taken at each operation so that flow of work is standardised. 6. The process of stages of production should be continuous.

Advantages of mass production:
A properly planned flow production method, results in the following advantages: 1. The product is standardised and any deviation in quality etc. is detected at the spot. 2. There will be accuracy in product design and quality. 3. It will help in reducing direct labour cost. 4. There will be no need of work-in-progress because products will automatically pass on from operation to operation. 5. Since flow of work is simplified there will be lesser need for control. 6. A weakness in any operation comes to the notice immediately. 7. There may not be any need of keeping work-in-progress, hence storage cost is reduced.

4. b) From the figures given below, calculate Economic Order Quantity (EOQ) and Total cost at EOQ? 6M

- Total consumption of material per year 10,000 kgs
- Buying / ordering cost per order Rs. 50
- Unit cost of material Rs. 2 per kg
- Carrying and storage cost 8%

Solution: Demand, D = 10,000 kgs
Unit cost C_u = Rs 2
Unit Carrying cost Cc = 8/100X2= Rs. 0. 16/-
Ordering cost Co= Rs 50

$$EOQ = \sqrt{2CoD/Cc}$$

$$= \sqrt{\frac{2x50x10000}{2X0.08}}$$

EOQ = 7906 units
Total cost of EOQ=7906x2= Rs. 15812/-

5. a) Explain the X-bar and R charts with an example. **6M**

The **control chart** is a graph used to study how a process changes over time. Data are plotted in time order. A **control chart** always has a central line for the average, an upper line for the upper **control** limit and a lower line for the lower **control** limit. These lines are determined from historical data.

An **X**-bar and **R** (range) **chart** is a pair of control **charts** used with processes that have a subgroup size of two or more. The standard **chart** for variables data, **X**-bar and **R charts** help determine if a process is stable and predictable. ... It is also used to monitor the effects of process improvement theories.

Steps in plotting X-bar and R- chart:

• Understand how X-bar and R-charts are used to monitor and control quality.

• Calculate the 3-sigma control limits for an X-bar and R-chart.

• Understand the most important considerations for designing X-bar and R-charts, including sample size, sample frequency and sigma level selection.

• Review the main steps in implementing Statistical Process Control (SPC).

Example:

The following is an example of how the control limits are computed for an x-bar and R chart. Note that at least 25 sample subgroups should use to get an accurate measure of the process variation. The subgroup sample size used here is 3, but it can range from 2 to about 10–12 and is typically around 5.

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
	11.1	10.1	9.8	11.3	11.2
	9.2	11.2	10.2	10.1	9.4
	11.3	9.9	9.9	10.1	8.9
x-bar	10.5	10.4	10.0	10.5	9.8
R	2.1	1.3	0.4	1.2	2.3

R Chart

$$\text{Centerline} = \bar{R} = \frac{2.1 + 1.3 + 0.4 + 1.2 + 2.3}{5} = \frac{7.3}{5} = 1.46$$

$$\text{Upper Control Limit} = UCL = D_4(\bar{R}) = 2.57(1.46) = 3.75$$

$$\text{Lower Control Limit} = LCL = D_3(\bar{R}) = 0(1.46) = 0$$

x-bar Chart

$$\text{Centerline} = \bar{\bar{x}} = \frac{10.5 + 10.4 + 10.0 + 10.5 + 9.8}{5} = 10.24$$

$$\text{Upper Control Limit} = \bar{\bar{x}} + A_2(\bar{R}) = 10.24 + 1.02(1.46) = 11.73$$

$$\text{Lower Control Limit} = \bar{\bar{x}} - A_2(\bar{R}) = 10.24 - 1.02(1.46) = 8.75$$

5. b) Distinguish between productivity and production. **6M**

PARAMETER	PRODUCTION	PRODUCTIVITY
Meaning	Production is a function of an organization which is associated with the conversion of range of inputs into desired output.	Productivity is a measure of how efficiently resources are combined and utilized in the firm, for achieving the desired outcome.
What is it?	Process	Measure
Represents	Numbers of units produced.	Ratio of output to input
Expression	Absolute terms	Relative terms
Determines	Value of output	Efficiency of factors of production

UNIT III

6. a) Explain the different functions of finance. **6M**

1. **Estimation of capital requirements:** A finance manager has to make estimation with regards to capital requirements of the company. This will depend upon expected costs and profits and future programmes and policies of a concern. Estimations have to be made in an adequate manner which increases earning capacity of enterprise.
2. **Determination of capital composition:** Once the estimation has been made, the capital structure has to be decided. This involves short- term and long- term debt equity analysis. This will depend upon the proportion of equity capital a company is possessing and additional funds which have to be raised from outside parties.
3. **Choice of sources of funds:** For additional funds to be procured, a company has many choices like-
    a. Issue of shares and debentures
    b. Loans to be taken from banks and financial institutions
    c. Public deposits to be drawn like in form of bonds.

    Choice of factor will depend on relative merits and demerits of each source and period of financing.

4. **Investment of funds:** The finance manager has to decide to allocate funds into profitable ventures so that there is safety on investment and regular returns is possible.
5. **Disposal of surplus:** The net profits decision have to be made by the finance manager. This can be done in two ways:
    a. Dividend declaration - It includes identifying the rate of dividends and other benefits like bonus.

b. Retained profits - The volume has to be decided which will depend upon expansional, innovational, diversification plans of the company.

6. **Management of cash:** Finance manager has to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, maintainance of enough stock, purchase of raw materials, etc.
7. **Financial controls:** The finance manager has not only to plan, procure and utilize the funds but he also has to exercise control over finances. This can be done through many techniques like ratio analysis, financial forecasting, cost and profit control, etc.

6. b) Describe the declining balance method of depreciation with an example. 6M

Declining balance method of depreciation is an accelerated depreciation method in which the depreciation expense declines with age of the fixed asset. Depreciation expense under the declining balance is calculated by applying the depreciation rate to the book value of the asset at the start of the period

For example:

Let,

Initial cost C = Rs 1,50, 000
Scrap value S = Rs 25, 000
Expected life of machine N = 6 years
X= 0.25

Value of machine at the end of first year $C_1=C\ (1-x) = 1,50,\ 000\ (1-0.25) =$ Rs 112,500
Depreciation fund at the end of first year $D_1=C-C_1 = 1,50,000-112,500 =$ Rs 37,500
Value of machine at the end of second year $C_2=C_1\ (1-x) = 112,500\ (1-0.25) =$ Rs 84,375
Depreciation fund at the end of second year $D_2=C_1-C_2 = 112,500-84,375 =$ Rs 28, 125
Value of machine at the end of third year $C_3=C_2\ (1-x) = 84,375\ (1-0.25) =$ Rs 63,281.25
Depreciation fund at the end of third year $D_3=C_2-C_3 = 84,375-\ 63,\ 281.25=$ Rs 21093.75
Value of machine at the end of fourth year $C_4=C_3\ (1-x) = 63,281.25\ (1-0.25) =$ Rs 47,460.937
Depreciation fund at the end of fourth year $D_4=C_3-C_4 = 63,\ 281.25-\ 47,460.937 =$ Rs 15, 820.32
Value of machine at the end of fifth year $C_5=C_4\ (1-x) = 47,460.937\ (1-0.25) =$ Rs 35595.7
Depreciation fund at the end of fifth year $D_5=C_4-C_5 = 35595.7-35595.7=$ 11,865.237
Value of machine at the end of sixth year $C_6=C_5\ (1-x) = 35595.7\ (1-0.25) =$ Rs 26,696.77
Depreciation fund at the end of sixth year $D_6=C_5-C_6 = 35595.7-26,696.77 =$ 8,898.93

$D_1+D_2+D_3+D_4+D_5+D_6=37,500+28,125+21093.75+15,820.32+11,865.237+8,898.93=$Rs 123,303.237

7. a) Explain the recruitment and selection in detail. 6M

Recruitment refers to the overall process of attracting, selecting and appointing suitable candidates for jobs (either permanent or temporary) within an organization. **Recruitment** can also refer to processes involved in choosing individuals for unpaid positions, such as voluntary roles or unpaid trainee roles.
Recruitment (hiring) is a core function of human resource management. Recruitment refers to the overall process of attracting, selecting and appointing suitable candidates for jobs (either permanent or temporary) within an organization. Recruitment can also refer to processes involved in choosing individuals for unpaid positions, such as voluntary roles or unpaid trainee roles. Managers, human resource generalists and

recruitment specialists may be tasked with carrying out recruitment, but in some cases public-sector employment agencies, commercial recruitment agencies, or specialist search consultancies are used to undertake parts of the process. Internet-based technologies to support all aspects of recruitment have become widespread. Whenever there is a vacancy in the organization, generally it is to be filled. To make the candidate available for filling those vacancies, their selection procedure and placement on a proper job comes under the purview of recruitment. As soon as the available vacancies are known, they are advertised through different media and accordingly the applications are collected for the vacant posts. A group of candidates interested in doing the job and are eligible to do, it is created through recruitment. It is an operative function of human resource management coming under the managerial function called organizing. In the words of Edwin Flippo, recruitment is the process of searching for prospective employees and stimulating them to apply for jobs in the organization.

In short, it involves attracting and obtaining as many applications as possible from eligible job seekers.

SELECTION: The first step in the **selection process** is to review the information (resume, application form) provided by all job applicants to determine which applicants meet the minimum qualifications as stated in the job posting. No further consideration will be given to those who do not meet the minimum qualifications. Finding the interested candidates who have submitted their profiles for a particular job is the process of recruitment and choosing the best and most suitable candidates among them is the process of selection. It results in elimination of unsuitable candidates. It follows scientific techniques for the appropriate choice of a person for the job. The recruitment process has a wide coverage as it collects the applications of interested candidates, whereas the selection process narrows down the scope and becomes specific when it selects the suitable candidates. Stone defines, Selection is the process of differentiating between applicants in order to identify (and hire) those with a greater likelihood of success in a job.

Steps Involved in Selection Procedure:

A scientific and logical selection procedure leads to scientific selection of candidates. The criterion finalized for selecting a candidate for a particular job varies from company to company. Therefore, the selection procedure followed by different organizations, many times, becomes lengthy as it is a question of getting the most suitable candidates for which various tests are to be done and interviews to be taken. The procedure for selection should be systematic so that it does not leave any scope for confusions and doubts about the choice of the selected candidate.

Brief details of the various steps in selection procedure are given as follows:

1. Inviting applications:

The prospective candidates from within the organization or outside the organization are called for applying for the post. Detailed job description and job specification are provided in the advertisement for the job. It attracts many candidates from various areas.

2. Receiving applications:

Detailed applications are collected from the candidates which provide the necessary information about personal and professional details of a person. These applications facilitate analysis and comparison of the candidates.

3. Scrutiny of applications:

As the limit of the period within which the company is supposed to receive applications ends, the applications are sorted out. Incomplete applications get rejected; applicants with un-matching job specifications are also rejected.

4. Written tests:

As the final list of candidates becomes ready after the scrutiny of applications, the written test is conducted. This test is conducted for understanding the technical knowledge, attitude and interest of the candidates. This process is useful when the number of applicants is large. Many times, a second chance is given to candidates to prove themselves by conducting another written test.

5. Psychological tests:

These tests are conducted individually, and they help for finding out the individual quality and skill of a person. The types of psychological tests are aptitude test, intelligence test, synthetic test and personality test

6. Personal interview:

Candidates proving themselves successful through tests are interviewed personally. The interviewers may be individual or a panel. It generally involves officers from the top management. The candidates are asked several questions about their experience on another job, their family background, their interests, etc. They are supposed to describe their expectations from the said job. Their strengths and weaknesses are identified and noted by the interviewers which help them to take the final decision of selection.

7. Reference check:

Generally, at least two references are asked for by the company from the candidate. Reference check is a type of crosscheck for the information provided by the candidate through their application form and during the interviews.

8. Medical examination:

Physical strength and fitness of a candidate is must before they takes up the job. In-spite of good performance in tests and interviews, candidates can be rejected on the basis of their ill health.

9. Final selection:

At this step, the candidate is given the appointment letter to join the organization on a particular date. The appointment letter specifies the post, title, salary and terms of employment. Generally, initial appointment is on probation and after specific time period it becomes permanent.

10. Placement:

This is a final step. A suitable job is allocated to the appointed candidate so that they can get the whole idea about the nature of the job. They can get adjusted to the job and perform well in future with all capacities and strengths.

7. b) Discuss the different methods of performance appraisal. 6M

Performance appraisal (PA), also referred to as a **performance** review, **performance** evaluation, (career) development discussion, or employee **appraisal** is a method by which the job **performance** of an employee is documented and evaluated.

1. Ranking
2. Paired Comparison
3. Forced Distribution
4. Confidential Report
5. Essay Evaluation
6. Critical Incident
7. Checklists
8. Graphic Rating Scale
9. BARS
10. Forced Choice Method
11. MBO
12. Field Review Technique

13. Performance Test

We will be discussing the important **performance appraisal tools and techniques** in detail.

1. Ranking Method

The ranking system requires the rater to rank his subordinates on overall performance. This consists in simply putting a man in a rank order. Under this method, the ranking of an employee in a work group is done against that of another employee. The relative position of each employee is tested in terms of his numerical rank. It may also be done by ranking a person on his job performance against another member of the competitive group.

Advantages of Ranking Method

i. Employees are ranked according to their performance levels.

ii. It is easier to rank the best and the worst employee.

Limitations of Ranking Method

iii. The ―whole man‖ is compared with another ―whole man‖ in this method. In practice, it is very difficult to compare individuals possessing various individual traits.

iv. This method speaks only of the position where an employee stands in his group. It does not test anything about how much better or how much worse an employee is when compared to another employee.

v. When a large number of employees are working, ranking of individuals become a difficult issue.

vi. There is no systematic procedure for ranking individuals in the organization. The ranking system does not eliminate the possibility of snap judgements.

2. Forced Distribution method

This is a ranking technique where raters are required to allocate a certain percentage of rates to certain categories (eg: superior, above average, average) or percentiles (eg: top 10 percent, bottom 20 percent etc). Both the number of categories and percentage of employees to be allotted to each category are a function of performance appraisal design and format. The workers of outstanding merit may be placed at top 10 percent of the scale, the rest may be placed as 20 % good, 40 % outstanding, 20 % fair and 10 % fair.

Advantages of Forced Distribution

i. This method tends to eliminate raters bias

ii. By forcing the distribution according to pre-determined percentages, the problem of making use of different raters with different scales is avoided.

Limitations of Forced Distribution

iii. The limitation of using this method in salary administration, however, is that it may lead low morale, low productivity and high absenteeism. Employees who feel that they are productive, but find themselves in lower grade (than expected) feel frustrated and exhibit over a period of time reluctance to work.

3. Critical Incident techniques

Under this method, the manager prepares lists of statements of very effective and ineffective behaviour of an employee. These critical incidents or events represent the outstanding or poor behaviour of employees or the job. The manager maintains logs of each employee, whereby he periodically records critical incidents of the workers behavior. At the end of the rating period, these recorded critical incidents are used in the evaluation of the worker ‘s performance. Example of a good critical incident of a Customer Relations Officer is: March 12 - The Officer patiently attended to a customer’s complaint. He was very polite and prompt in attending the customers problem.

Advantages of Critical Incident techniques

i. This method provides an objective basis for conducting a thorough discussion of an employee's performance.

ii. This method avoids recency bias (most recent incidents are too much emphasized)

Limitations of Critical Incident techniques

iii. Negative incidents may be more noticeable than positive incidents.

iv. The supervisors have a tendency to unload a series of complaints about the incidents during an annual performance review session.

v. It results in very close supervision which may not be liked by an employee.

vi. The recording of incidents may be a chore for the manager concerned, who may be too busy or may forget to do it.

4. Checklists and Weighted Checklists

In this system, a large number of statements that describe a specific job are given. Each statement has a weight or scale value attached to it. While rating an employee the supervisor checks all those statements that most closely describe the behaviour of the individual under assessment. The rating sheet is then scored by averaging the weights of all the statements checked by the rater. A checklist is constructed for each job by having persons who are quite familiar with the jobs. These statements are then categorized by the judges and weights are assigned to the statements in accordance with the value attached by the judges.

Advantages of Checklists and Weighted Checklists

i. Most frequently used method in evaluation of the employee's performance.

Limitations of Checklists and Weighted Checklists

ii. This method is very expensive and time consuming

iii. Rater may be biased in distinguishing the positive and negative questions.

UNIT IV

8. a) Write the objectives of entrepreneurial development. 6M

Objectives of Entrepreneurial development:

1. To develop and strengthen the entrepreneurial characteristics
2. To analyze industrial environment concerned with small scale industry and small business enterprises
3. To select the product to be manufactured
4. Formulate project reports
5. To analyze and understand the procedure for establishing the small enterprises
6. To provide support required for launching the enterprise
7. To acquire basic management skills needed
8. To appreciate the social responsibilities
9. To let the entrepreneur set the objectives of his business
10. To prepare the entrepreneur to accept moderate risks
11. To take strategic decisions
12. To develop communication skills

8. b) Explain the entrepreneurial characteristics in detail. 6M

- **Motivation:**

  Hard-working business owners are incredibly motivated to succeed. Adopting this mindset—and being able to demonstrate your motivation to an employer—is crucial.

- **Creativity:**

  No matter what industry you're in, employers want workers with out-of-the-box ideas.

  That's why it's important to be creative—to always be thinking of new ways you can improve your company's workflow, productivity, and bottom line.

- **Persuasiveness:**

  Persuasiveness can make you a better negotiator, which gives you an edge when going after a plum assignment, raise, or promotion.

  "There are times when you are going to need to convince a client, a co-worker, or your boss to take certain actions, so you need to be persuasive" when presenting your ideas.

- **Vision:**

  Successful entrepreneurs always keep one eye on the big picture, and this ability can make you a better employee. "Vision is about strategic planning,"

  Can you see what direction the industry is going? Can you identify challenges for your company? Can you tackle your day-to-day job responsibilities, while staying focused on long-term goals and initiatives?

- **Versatility:**

  One must be able to adapt to changes in the workforce. "You may be hired for a specific set of skills, but it's important to be able to shift as needed,"

  You want to be someone that your boss can go to in a pinch, so be prepared to tackle work that's outside your job description. It's also important to be an early adopter of new technology and keep your skills current.

- **Risk tolerance:**

  "Every employer wants to grow their business, which often involves risk and change,"

  Translation: Don't be afraid to take risks when pursuing new clients, for example, or testing a new product. (One caveat: Make sure you have your boss' buy-in before taking a risk.)

- **Flexibility:**

  Like an entrepreneur, you must be able to adapt to change and solve problems as they arise. A good team player can shift their priorities to help whenever the team needs assistance. Thus, flexibility means being receptive to other people's needs, opinions, and ideas and being open-minded to feedback from your manager.

- **Decisiveness:**

  Do you exercise sound judgment under pressure? When you're an entrepreneur, you don't have room to procrastinate—and the same is true for employees. "You have to be able to take action when needed,". You must know how to prioritize tasks and make decisions quickly. (It helps to be organized.)

- **Collaboration:**

  Savvy entrepreneurs are not only brilliant leaders, but also great collaborators, so you have to be an effective team player. Unsurprising, 78% of hiring managers seek job candidates who demonstrate strong teamwork skills and Ultimately, using entrepreneurial skills at work entails adjusting to other people's work styles, avoiding office politics, celebrating your peers' successes, meeting your deadlines, and putting your company's goals first

9. a) Discuss in detail about finance for the enterprises. 6M

The role of finance in business is to make sure there are enough funds to operate and that you're spending and investing wisely. The importance of business finance lies in its capacity to keep a business operating smoothly without running out of cash while also securing funds for longer-term investments. Finance relies on accounting, but while accounting is mainly descriptive, finance is active, using accounting information to manifest tangible results

The various sources from which an enterprise can raise the required funds could broadly be classified into two sources:

1. Internal Sources
2. External Sources

1. Internal Sources:

Under this source, funds are raised from within the enterprise itself. The internal sources of financing could be owner's capital known as equity, deposits and loans given by the owner, the partners, the directors, as the case may be, to the enterprise.
One source for raising funds internally may be personal loans taken by the entrepreneur on his/her personal assets like Provident Fund, Life Insurance Policy, buildings, investments, etc. In addition to these, in case of a running enterprise, funds could also be raised through the retention of profits or conversion of some assets into funds.
The cardinal principal of financial management also suggests that an entrepreneur should religiously plough back a good portion of his/her profits into the enterprise itself. However, the scope for raising funds from internal sources particularly in the case of small-scale enterprises remains highly limited.

2. External Sources:

In short, funds raised from other than internal sources are from external sources.

The external sources usually include the following:

1. Deposits or borrowings from relatives and friends and others.
2. Borrowings from the banks for working capital purposes.

3. Credit facilities from the commercial banks.
4. Term-loans from financial institutions.
5. Hire-purchase or leasing facility from the National Small Industries Corporation (NSIC) and State Small Industries Corporations (SSICs)
6. Seed/Margin money, subsidies from the Government and the financial institutions.

9. b) Describe the steps in plant design. **6M**

Steps involved in plant design are:

- **Consultation** with a professional process engineering company
- **Design** - creating process flow diagrams, P&ID's and specifying the basic system components
- **Advanced 3D modeling and process simulation** – the process technology and proposed pilot plant equipment are run through an engineering simulation to ensure proper equipment sizing, system controls, and to find the optimal pilot plant design.
- **Controls engineering** – automation and controls are developed for the pilot skid, installed, and tested during fabrication and assembly.
- **Fabrication and assembly** of the process module(s) begins after final design is completed. Factory acceptance testing (FAT) is conducted at the end of fabrication to ensure proper module function.
- **Installation** – after testing is completed, pilot plants are shipped to their final destination and installed. Typical installation only takes a few days, with minimal plant interruption.
- **Startup** – modules are fully commissioned with punch-list resolution. Training for operators and maintenance personnel is conducted and the pilot plant is turned over with complete documentation.

Date: 18.Nov.2019

Signature of Head of the Department