

R16

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, May - 2019

INDUSTRIAL MANAGEMENT

(Common to CE, EEE, ME, ECE, CSE, IT, MMT, MIE)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

- 1.a) Asses the contribution of scientific management to the development of management thought? [2]
- b) What do you understand by a system? Discuss management as system bringing out its basic features as such. [3]
- c) What is departmentation? How it is essential for the management of a business enterprise. [2]
- d) What is virtual organization? Discuss the reasons for the emergence of the concept of virtual organization. [3]
- e) What are the different types of layouts? How should an organization decide on which layout to choose? [2]
- f) Is group technology layout any differ from a product layout? Give reasons for your answer. [3]
- g) Discuss the fundamental factors affecting quality. [2]
- h) What are the important factors effecting the allowances in work study? [3]
- i) What do you mean by job evaluation? How does it differ from performance appraisal? [2]
- j) Provide an example of precedence relationships from your personal life. [3]

PART - B

(50 Marks)

- 2.a) Discuss the contributions of Hawthorne Experiments in the development of managerial thinking. How did behavioral scientists modify the basic findings of Hawthorne Experiments?
 - b) "Theory X and Theory Y are concerned with the nature of people". How does the job situation affect the application of this theory? What are its implications? [5+5]
- OR**
- 3.a) How do functional areas of management differ from management functions? Discuss the major functional areas of management.
 - b) Bring out the significance of the statement, 'effective management is always contingency or situational management'. How does systems approach of management differ from contingency approach? [5+5]

- 4.a) Describe various bases for departmentation and suggest a scheme of departmentation for a large marketing company with a field network all over the country.
- b) How does line and staff organization structure differ from pure line organization structure? What are the benefits and limitations of line and staff organization structure? [5+5]

OR

- 5.a) What is the role of operators in an organization? What are the other functions in an organization? Are these functions independent of one another? Give some examples to support your argument.
- b) What do you mean by matrix organization? How does it differ from project organization? Discuss the situations under which matrix organization can be used fruitfully. [5+5]

- 6.a) An organization has warehouses for life saving drugs at six different locations whose coordinates given in the following table. The organization is in the process of locating one more critical central warehouse which will distribute drugs to all the existing warehouses on emergency request. Find the location of new warehouse.

| Existing warehouse number | Coordinates of Centroids |
|---------------------------|--------------------------|
| 1 | 200,100 |
| 2 | 400,300 |
| 3 | 250,120 |
| 4 | 550,200 |
| 5 | 220,250 |
| 6 | 400,300 |

- b) What are the pros and cons of using the location factor analysis method for location planning? Do you have any recommendations on how to use this method for location planning? [5+5]

OR

- 7.a) Suppose you are given three alternative designs for the layout of a shop floor in a manufacturing organization. How will you decide which of the three is the most appropriate?

- b) Identify an appropriate layout for each of the following situations. Justify your choice in a sentence or two:

- i) A manufacturer of garments for Van Heusen
- ii) A multi cuisine restaurant in a posh residential area in Mumbai.
- iii) The overhaul of helicopters.
- iv) A fabricator of custom made PCBs for a large number of electronic applications.
- v) An eye hospital.
- vi) A motor manufacturer manufacturing 4 product groups for worldwide markets.
- vii) A manufacturer of large turbines for power sector applications. [5+5]

- 8.a) A manufacturer of garments wants to set up a quality control system using control charts for process control. The manufacturer has the three options to choose from:
- Measure the critical dimensions of the garment for establishing its quality.
 - Segregate every batch of production into good quality and seconds quality.
 - Estimate the number of defects for bale of cloth issued for production.
- The manufacturer is not sure about what it means to choose which of the above. Prepare a report explaining the pros and cons of each of the choices, the nature of efforts required to setup control charts and implications of their use.
- b) Explain different charts and diagrams which are used in method study? [5+5]

OR

- 9.a) i) A department store manager wishes to make a work sampling study to estimate the percentage time that clerks are busy waiting for customers and percent time that they are idle. The current best guess is that clerks are idle 25 percent of the time. Determine the number of observations required if we wish to be 95 percent confident that the results is within \pm percent, given number of observations at 20% is 2995 and at 30% it is 3750 for the same precision.
- ii) Compare stopwatch study and work sampling in terms of the cost to make studies, representatives of samples taken, field o application and comparative accuracy.
- b) A time study was made of a punch press operator. The average observed time after discounting non-normal occurrences was 0.52 minute per unit. The operator performance was judged to be 90 and the allowances for this type of work total 12 percent. What is the normal time and standard time for this job? [5+5]

- 10.a) A firm is considering the launch of a new product in the national market. The project consists of the ten major activities. The precedence relationship and the estimated duration of each of the activity is given in the table below.

| Activity | Predecessor | Duration (weeks) |
|----------|-------------|------------------|
| A | - | 8 |
| B | - | 3 |
| C | A | 6 |
| D | B | 4 |
| E | B | 5 |
| F | A | 4 |
| G | B | 6 |
| H | C, D, E | 6 |
| I | F, G, H | 6 |

- Draw a network of the above project.
 - What is the total duration of the project?
 - Identify the critical path? Do you have any specific observation to make?
 - Suppose the duration of the activity 'f' was wrongly estimated and the revised estimate is 10 weeks. What is the implication of this change?
- b) Explain the trade- off in network crashing. [5+5]

OR

11.a) Projects involve direct as well indirect costs and project managers need to use this information in project management. Comment on this statement.

b) A project management firm is preparing a network for one of the projects that it has recently bid for. The client demands that the project needs to be completed and delivered at its site by week 25. The firm has identified the list of activities to be performed and estimated the duration of each of the activities. The details are given in the table below. Use this information to draw a network and help the firm answer the following questions

| Activity | Predecessor | Duration (weeks) |
|----------|-------------|------------------|
| A | - | 8 |
| B | A | 3 |
| C | A | 6 |
| D | A | 4 |
| E | B | 5 |
| F | B | 4 |
| G | C,E | 6 |
| H | D | 6 |
| I | F | 6 |
| J | D | 4 |
| K | G,H,I | 3 |
| L | J,K | 3 |

i) Will the firm be able to meet with the customer's dead line of 25 weeks?

ii) If the firm can not, identify the set of activities that need to be considered for a possible reduction in duration.

iii) If the cost of reduction is Rs 10000 per week and the firm will have to pay a penalty of Rs 7000 per week of delay in completion in addition to paying affixed amount of Rs 20000, what will your recommendation be to the firm with respect to reducing the duration? [5+5]

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