Code No: 117DV

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, November/December - 2017
INDUSTRIAL MANAGEMENT
(Mechanical Engineering)

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) Why social responsibility has become an important facet of management in the present times?
                                                                                                            [2]
  b) What are the appreciations of Fayol's functional school of Management theory?   [3]
  c) What is matrix organization? What are its strengths and weaknesses?   [2]
  d) What do you understand by the term 'span of control' and 'unity of command'?   [3]
  e) Give a comparative statement in the location study of a rural site and urban site.   [2]
  f) List out Muther's principles of layout?   [3]
  g) Give the basic aspects that work study takes care of.   [2]
  h) Explain Ishikawa's Fishbone diagrams? What are its applications?   [3]
  i) Define the terms Job Description and Evaluation   [2]
  j) Explain the meaning and concept of 'crashing' in network technique.   [3]

PART - B

(50 Marks)

2.a) What are the basic elements of hierarchical need approach? What are the effects of these
      elements on the management style?
  b) Elton Mayo projected a new angle of Management. What is that angle? Explain.   [5+5]
OR
3.a) What are managerial functions? How are they integrated?
  b) Examine the scientific nature in Taylor's scientific management.   [5+5]

4.a) Distinguish between a military organization and a functional organization.
  b) What is a network organization structure? Give the areas where it is best suitable for
      adopting. Give its strengths and weaknesses.   [5+5]
OR
5.   Which organization, formal or informal, do you feel is the strengthener in executing
     industrial management? How? Give some exemplary situations in support of your
     answer.   [10]

6.a) Define continuous production. List out its characteristics.
  b) Design the best suitable layout plan for a cool drink/ beverage bottling factory. (assume
      the data and required operations arbitrarily).   [5+5]

OR

7.a) Distinguish between cost and value. What are different types of values? Explain with examples.

b) What facilities would influence (both favorable and/or unfavorable) the location decisions in the case of the following:
i) city/urban sites,
ii) sub-urban sites, and
iii) rural/countryside sites. [5+5]

8.a) With reference to method study, describe the effect of the following factors:
i) Economic factors,
ii) Technical factors
iii) Human fctors.

b) Construct X and R-charts from the following information and state whether the process is in control. For each of the following, X has been computed from a sample of 5 units drawn at an interval of 2 hours from an ongoing manufacturing process. Given $A_2 = 0.577$ and $D_3 = 0$ and $D_4 = 2.114$

Sample	1	2	3	4	5	6	7	8	9	10
Mean X	23	37	34	13	29	26	39	45	34	20
Range R	10	30	11	21	17	20	5	14	38	34

Give your comments on the results. [5+5]

OR

9.a) What are desirable characteristics of a sample taken for sampling plan? Explain.

b) A job has been subdivided into 4 elements. The time for each element and respective ratings are given below: Calculate the normal time and standard time for each element and for the job if allowance is 5%. [5+5]

Element no.	Observed time	Rating factor (%)
1	0.6	100
2	1	80
3	1.2	130
4	1.5	90

10. A workshop shed construction project is composed of five jobs as P (foundation and walls), Q (roofing), R (install electricity), S (plumbing), and T (connect services to finish). Activity P must precede all others while activity T must follow all others. Apart from this, jobs can run concurrently. The normal cost in thousands of rupees per day and crash cost in thousands of rupees per day for the activities are given in the form X(Nc/Nt, Cc/Ct) where (Nc is Normal cost, Nt is Normal time; and Cc is Crash cost, Ct is Crash time)) as P (60/10; 80/8), Q (24/12, 40/4), R (20/8, 36/6), S (24/10, 40/6), and T (32/6, 32/6). Draw the network and AON diagrams and identify the critical path. Also, crash the network fully to find out the minimum duration and optimum cost. Given is indirect costs as Rs. 6000/day. [10]

OR

11.a) Describe briefly the factor comparison method of job evaluation.

b) A project PERT network has only three possible paths, P-R, P-S-U, and Q-T-U. The activities, along with their expected time and standard deviations, are represented in ordered pairs as P(8, 2), Q(16, 4), R(15, 3), S(14, 2), T(5, 2), and U(5, 1). Develop the network and find the probability of completing the project in 25 days.　　　　[5+5]

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