Code No: 117DV **R13**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, March - 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) What are the functions of management? [2]

b) Asses the contribution of scientific management to the development of management thought? [3]

c) What is departmentation? How it is essential for the management of a business enterprise? [2]

d) How will you determine if an organization does or does not have a good product development process in place? [3]

e) What are the factors which determine the appropriate span of management? [2]

f) Compare the urban and rural site plant layout. [3]

g) Discuss the fundamental factors affecting quality. [2]

h) What are the steps involved in work study? [3]

i) What do you mean by performance appraisal? Discuss its need and importance in an organization? [2]

j) What do you mean by PERT and CPM? What are their uses in managerial planning and control? [3]

Part-B (50 Marks)

2.a) Explain briefly the Fayol's principles of management and Mayo's Hawthorne Experiments.

b) Differentiate between Japanese and American management with suitable examples.[5+5]

OR

3.a) Briefly explain about the different types of organization structures.

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) 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.

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) 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) Differentiate the inverted pyramid structure, beam and flat organization structure.[5+5]

6.a) Discuss the main objective which a factory planning engineer should attempt to achieve when designing a plant layout. Explain what is meant by a travel chart and show how such a chart can be of use in determining the best relative location of departments in a factory?

b) Explain briefly travel chart? What type of layout do you think might be appropriate for the manufacture of the V- belt pulley, discuss. [5+5]

OR

7. What is value analysis? Explain in detail. [10]

8.a) i) A department store manager wishes to make a work sampling study to estimate the percentage time that the 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 observation required if we wish to be 95 percent confident that the results is with in ± 1.5 percent, given number of observations at 20% is 2995 and at 30% it is 3750 for the same precision. (ii) Compare stop watch study and work sampling in terms of cost to make studies, representatives of samples taken and comparative accuracy.

b) Suppose an organization utilizes a variable based measurement system for process control. During a period, it was found that while all the plotted observations with in the control limits in the X bar chart, on point was lying outside the control limits in the R chart. What should the organization do in this case? [5+5]

OR

9.a) i) Draw a simo chart for in setting a letter in a envelope and sealing it.
ii) What do you understand by a flow process chart explain.

b) 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:
i) Measure the critical dimensions of the garment for establishing its quality.
ii) Segregate every batch of production into good quality and seconds quality.
iii) 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. [5+5]

10.a) What are the benefits of job evaluation and its limitations?

b) Consider the following data of a project.

		Duration (weeks)		
Activity	Predecessor(s)	A	m	b
A	-	1	2	3
B	-	2	2	8
C	A	6	7	8
D	B	1	2	3
E	A	1	4	7
F	C,D	1	5	9
G	C,D,E	1	2	3
H	F	1	2	9

i) Construct the project network.
ii) Find the expected duration and variance of each activity.
iii) Find the critical path and the expected project completion time. [10]

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 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

i) Draw a network of the above project.
ii) What is the total duration of the project?
iii) Identify the critical path? Do you have any specific observation to make?
iv) Suppose the duration of the activity 'f' was wrongly estimated and the revised estimate is 10 weeks. What is the implication of this change? [10]

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