Code No: 07A51401 **R07** **Set No. 2**

III B.Tech I Semester Examinations,May 2011
INDUSTRIAL MANAGEMENT
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What are advantages and limitations of merit rating system? [16]
2. What is P- system? State its advantages and disadvantages. [16]
3. Explain the requirements of a good plan. [16]
4. (a) Explain the rules to be followed while breakdown operation into elements.
   (b) What are the observed, normal and standard times of a job? [10+6]
5. (a) State the advantages and disadvantages of selecting an urban location and rural location for plant site.
   (b) Explain various factors to be considered for plant layout problem. [8+8]
6. Calcutta glass is a manufacturer and supplier of window panes for a major constructions group In order to control the quality of its window panes, its QC manager selects 15 panes at random and inspects each of them for manufacturing defects. The results shown in the following table. Prepare a stable c chart based on the data. [16]

Sample No	1	2	3	4	5	6	7	8
No.Of defects	3	12	21	3	7	8	3	1
Sample No	9	10	11	12	13	14	15	
No.Of defects	9	11	10	11	8	7	2	

7. The characteristics of a project schedule are as given below

Activity	Time(days)	Activity	Time(days)
1-2	4	5-6	4
1-3	1	5-7	8
2-4	1	6-8	1
3-4	1	7-8	2
3-5	6	8-10	5
4-9	5	9-10	7

   (a) Draw the network diagram
   (b) If scheduled completion time is equal to the earliest expected time, find total, free and independent floats of each activity. Enter values in a tabular form [16]
8. What are the causes of conflict between line and staff? What can be done to develop line and staff members into integrated team [16]

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Code No: 07A51401 **R07** **Set No. 4**

III B.Tech I Semester Examinations,May 2011
INDUSTRIAL MANAGEMENT
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
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1. The following data shows the values of sample mean $\overline{S}$ and the range R for 10 samples of size 5 each. Calculate the values for central line and control limits for mean chart and range chart and determine whether the process is under control.

Sample No	1	2	3	4	5	6	7	8	9	10
$\overline{S}$	11.2	11.8	10.8	11.6	11.0	9.6	10.4	9.6	10.6	10.0
R	7	4	8	5	7	4	8	4	7	9

[16]

2. Discuss the utility of outline process chart in method study. Differentiate between outline process chart and flow process chart. [16]

3. Explain the salient features of matrix organization. Explain its advantages and disadvantages. [16]

4. The following information is about a group of items.. Classify the items as A, B and C

Item no	501	502	503	504	505	506	507	508	509	510
Annual use	30000	280000	3000	110000	4000	220000	15000	80000	60000	8000
Price	10	15	10	5	5	10	5	5	15	10

[16]

5. Discuss the significance and limitations of planning [16]

6. (a) How can layout to be used to gain a competitive advantage.
   (b) Explain the characteristics of a travel chart. [8+8]

7. What are the Group Incentive plans? Discuss their suitability. [16]

8. A network consists of following activities with indicated duration in days

Activity	Duration in days
10-20	15
10-30	20
10-60	5
20-50	15
30-50	10
30-40	15
40-60	16
50-60	12
40-50	5

(a) Draw the network diagram

(b) If scheduled completion time is equal to the earliest expected time, find total, free and independent floats of each activity. Enter values in a tabular form.

(c) Calculate project duration and identify critical path. [16]

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Code No: 07A51401 **R07** **Set No. 1**

III B.Tech I Semester Examinations,May 2011
INDUSTRIAL MANAGEMENT
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
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1. (a) What are the objectives of work study.
   (b) List out various elements of method study. Explain any two elements of method study. [6+10]
2. List out various forms of organization structure. Explain any one in detail [16]
3. Alpha industry estimates that it will sell 12000 units of its product for the forthcoming year. The ordering cost is Rs. 100 per order and the carrying cost per unit per year is 20% of the purchase price per unit. The purchase price per unit is Rs.50. Find
   (a) Economic Order quantity
   (b) No. Of orders per year
   (c) Time between successive orders. [16]
4. (a) What is meant by TQM? What are the principle objectives of TQM
   (b) Explain the basic philosophy of quality circle. What are the benefits of quality circles [8+8]
5. Give the main principles of plant layout. What advantages are derived from efficient layout in a) Manufacturing cost (ii) production control (c) worker safety [16]
6. Discuss the contributions of Taylor to the theory of management. Explain why is he regarded as the father of scientific management. [16]
7. From the activity details given below, determine the optimal project duration by taking indirect cost as Rs.70/day.

	Normal		Crash	
Activity	Time	Cost	Time	Cost
1-2	8	100	6	200
1-3	4	150	2	350
2-4	2	50	1	90
2-5	10	100	5	400
3-4	5	100	1	200
4-5	3	80	1	100

[16]

8. Compare factor comparison and point rating methods of job evaluation. [16]

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Code No: 07A51401 **R07** **Set No. 3**

III B.Tech I Semester Examinations,May 2011
INDUSTRIAL MANAGEMENT
Mechatronics

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is Standard Time? Describe the procedure to calculate Standard Time from the observed time obtained by time study.
   (b) What are advantages and limitations of stopwatch time study. [8+8]
2. List methods of classifying inventory items? Explain each one of them. [16]
3. (a) Define variable. Explain it with example
   (b) Explain various control charts for variables [8+8]
4. A small maintenance project consists of the jobs in the following table. With each job is listed its normal time and a crash time in days. The cost in rupees per day of crashing each job is also given.

Activity	Normal duration (days)	Crash duration (days)	Cost of crashing Rs/day
1-2	9	6	20
1-3	8	5	25
1-4	15	10	30
2-4	5	3	10
3-4	10	6	15
4-5	2	1	40

   (a) What is the normal project length?
   (b) What is the optimum length if the overhead cost is Rs 60/day. [16]
5. Explain the various steps in facility location planning. [16]
6. (a) List out the principles of sound organization and explain any three in detail.
   (b) List out various methods of departmentation. Explain any one in detail. [8+8]
7. (a) Enumerate the assumptions of the McGregors Theory X and Theory Y.
   (b) What is the systems approach to management? Explain the salient features of this approach. [8+8]
8. Explain the following methods of merit rating.
   (a) Ranking method
   (b) Paired comparison method
   (c) Check list method [6+5+5]

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