

Code No: 07A51401

R07**Set No. 2****III B.Tech I Semester Examinations, November 2010****INDUSTRIAL MANAGEMENT****Mechatronics****Time: 3 hours****Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. Explain the features of virtual and cellular organization structures [16]
2. Differences between stopwatch time study and work sampling. [16]
3. Define job evaluation. What are the objectives of job evaluation? [16]
4. 20 samples of glassware item each of sample size 100 inspected. The inspection observations are given below:

Sample No	No. of defectives	Sample No	No. of defectives
1	2	11	3
2	1	12	2
3	3	13	0
4	0	14	4
5	2	15	1
6	3	16	7
7	1	17	0
8	2	18	1
9	0	19	3
10	4	20	1

Compute the control limits for p and np charts and draw p chart. What is your inference about the process. [16]

5. (a) Explain the important functions of inventory control.
 (b) What are the advantages of inventory control? What are the symptoms of poor inventory control? [8+8]
6. The following represents a project that should be scheduled using PERT

Activity	Immediate Predecessors	Times(days)		
		Optimistic time	Most likely time	Pessimistic time
A	-	10	22	28
B	A	4	4	10
C	A	4	6	14
D	B	1	2	3
E	C	1	5	9
F	C, D	7	8	9
G	E, F	2	2	2

- (a) Draw the network diagram

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- (b) What is critical path & the expected project completion time?
 (c) What is the probability of completing this project within 35 days? [4+6+6]

7. (a) List the general factors to be considered for plant location problem
 (b) The Dynaco Manufacturing company is going to build a new plant to manufacture ring bearings. The site selection team is evaluating three sites and they have scored the important factors for each as follows. They want to use these ratings to compare the locations. Suggest the best site.

Location factor	Weight	Scores(0 to 100)		
		Site 1	Site 2	Site 3
Labour pool & climate	0.3	80	65	90
Proximity to supplier	0.20	100	91	75
Wage rates	0.15	60	95	72
Community environment	0.15	75	80	80
Proximity to customer	0.10	95	90	95
Shipping modes	0.05	85	92	65
Air service	0.05	50	65	90

[4+12]

8. (a) Explain the need and importance of motivation.
 (b) Explain the Maslows need hierarchy theory.

[8+8]

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R07**Set No. 4****III B.Tech I Semester Examinations, November 2010****INDUSTRIAL MANAGEMENT****Mechatronics****Time: 3 hours****Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. Explain the requirements of a good plan. [16]

2. Explain various rules for drawing network using a suitable example. [16]

3. The following table gives the number of defects in a casting used for making crank case of a diesel engine

Casting no	1	2	3	4	5	6	7	8	9	10
Number of defects (c)	15	11	25	10	12	20	15	10	17	13

Construct a C-chart with 3 sigma limits and comment on the casting process. [16]

4. What do you understand by Recruitment Policy of an organization? Discuss the pre-requisites of a good recruitment policy [16]

5. An engine manufacturing company stocks the items as shown in the following table in its stores. The unit price, annual consumption quantity in terms of units/year are also given in the same table. Classify the items into A, B, and C categories.

Component Code	Description	Price /unit	Unit/year
C001	Connecting rod	500	600
C002	Crank case	4000	600
C003	Cylinder	2000	600
C004	Cylinder head	3000	600
C005	Crank shaft	4000	600
C006	Cam	500	1200
C007	Nozzle	500	600
C008	Valve set	1000	1200
C009	Fuel injection pump	1500	600

[16]

6. (a) Explain various considerations for location of a plant.

(b) What are the repercussions if location of a facility is not planned at all? [8+8]

7. Explain the following in detail

(a) Effective delegation

(b) Communication

(c) Dividing and Grouping work

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8. Explain basic steps in method study. Also discuss the recording techniques briefly.
[16]

FIRSTRANKER

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R07**Set No. 1****III B.Tech I Semester Examinations, November 2010****INDUSTRIAL MANAGEMENT****Mechatronics****Time: 3 hours****Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain methodology in CPM analysis for determining the critical path of a network.
- (b) What is meant by crashing of an activity?

[10+6]

2. A manufacturer has quality control data for his product as follows:

Item no	1	2	3	4	5	6	7	8	9	10
Number of defects (c)	21	19	16	17	17	15	20	25	18	16

Construct a C-chart with 3 sigma limits and comment on the process. [16]

3. What are benefits and limitations of job evaluation? [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. 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]

6. Explain the nature and significance of management. [16]
7. Explain the strengths and weaknesses of the following methods of departmentation:
 - (a) Departmentation by customer
 - (b) Departmentation by process or equipment [16]

8. Consider 5 industrial sectors in India, identify the existing locations of these industries in India and give separate reasons for the location of these industries in those regions.

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Mechatronics

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

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1. Explain salient features of line organization. What are its advantages and limitations. [16]
2. (a) What is meant by term management? Explain it's importance.
 (b) Define Management. Explain its nature and significance. [8+8]
3. (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]
4. Derive the Wilson EOQ formula. What are the practical limitations of the EOQ formula. [16]
5. Define plant layout. Discuss the principles of plant layout in the industry [16]
6. Explain Emerson and Bedeaux plans of wage incentive schemes and write advantages and limitations of them [16]
7. The activities details along with time estimates and precedence relationships are given below

Activity	Predecessor	Optimistic time	Activity Times	
			Most likely time	Pessimistic time
A	-	1	2	3
B	A	1	2	3
C	A	2	4	6
D	A	2	5	14
E	C,D	6	12	18
F	D	1	3	5
G	E	10	12	30
H	G	3	5	7
I	H	1	2	3
J	B & I	5	10	15

- (a) Draw the network
- (b) Determine the critical & project duration

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(c) If the project due date is 30, what is the probability of meeting the due date?
[4+6+6]

8. A textile manufacturer wants to set up a control chart for irregularities per 100 square yards of carpet. The following data were collected from a sample of twenty 100 square yard pieces of carpet.

Sample	1	2	3	4	5	6	7	8	9	10
Irregularities	11	8	9	12	4	16	5	8	17	10
Sample	11	12	13	14	15	16	17	18	19	20
Irregularities	11	5	7	12	13	8	19	11	9	10

- (a) Using these data, set up a c-chart with $Z=3$
 (b) suppose that the next five samples had 15, 18, 12, 22 and 21 irregularities, what do you conclude ? [16]
