

Q. P. Code : 619002

(OLD COURSE)

(3 HOURS)

[Total Marks:100]

N.B:

1. Question No:1 is compulsory
2. Attempt any four questions out of remaining six questions.
3. Figures to the right indicates full marks

- 1 Write short notes on any four of the following 20
- a. A-B-C Analysis
 - b. Work-break down structure
 - c. Occupational health hazards
 - d. Costs of accidents
 - e. Bar chart
- 2.a Explain the concept of management. Enlist the principles of management and give a brief description of each principle. 10
- b The interdependence of a job consisting of seven activities and time estimates are given in the following table: 10

Activity	P	Q	R	S	T	U	V
Preceding activity	-	-	P	P	P	Q	R & S
t_0	8	4	3	4	3	3	5
t_m	12	9	8	7	9	6	12
t_p	16	18	25	16	16	10	20

Draw a network and determine:

- i) Project deviation corresponding to 50% probability
- ii) Probability of completing the project in 33 days
- iii) Probability of completing the project in 25 days
- iv)

Z value	-3.0	-2.0	-1.0	0	1	2	3
Probability	0.001	0.023	0.157	0.5	0.841	0.977	0.999

- 3.a i) What is the role of inspection in quality control? Explain. 5
- ii) Explain the function of material management. 5
- b The following data pertains to a construction project. 10

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Activity	A	B	C	D	E	F	G
Predecessor	-	A	-	A	C	D, E	B, C
Duration (days)	4	2	2	2	8	6	4
Resource/day	4	5	3	8	3	2	3

Work out the resources requirement on a day to day basis when all activities are scheduled to start at their:

- Early dates
- Late dates

Which of these schedules would you prefer? Why?

4.a The details of activities are given below:

Activity	Normal duration (weeks)	Normal cost (Rs)	Crash duration (weeks)	Crash Cost (Rs)
1-2	6	7000	4	14,500
1-3	8	4000	4	8500
2-3	4	6000	3	9000
2-4	5	8000	2	15,000
3-4	6	5000	3	11,000
3-6	2	9000	2	12,500
4-5	4	10,000	2	16,000
5-6	4	12,000	2	15,000

The direct cost of the project is Rs.3000 per week. Determine the optimum duration of the project and the corresponding minimum cost.

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b Explain:

- Quality control
- Network Rules

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5.a Draw a A-O-A diagram by using network rules. Determine the critical path and project duration. Also determine all float values for all activities.

Activity	A	B	C	D	E	F	G	H	I	J
Immediate Predecessor	-	A	A	A	B, C	D	F	-	E	G, H
Duration	2	4	6	8	10	4	5	7	12	15

10

b What is updating? Why is updating required? Explain the procedure of updating a network.

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- 6.a Explain the meaning of time over-run and cost over-run. Give remedial measures. 10
- b Define accident. List the common causes of accidents in construction and also suggest suitable measures to prevent them. 10
7. Write short notes on any four of the following: 20
- i) Economic Order Quantity
 - ii) Diary of a Site Supervisor
 - iii) Injury Frequency Rate
 - iv) Checklist in Quality Control
 - v) Histogram
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