3 Hours **80 Marks**

NB: Question No 1 is compulsory
Attempt any three questions out of remaining five questions
Figures to the right indicates full marks

Q1. Answer any four of the following (5 marks each) [20]

A What is meant by Work Breakdown structure? Explain with example

B Explain the term Quality assurance and quality control

C Distinguish between resource smoothening and resource leveling?

D Distinguish between PERT and CPM?

E What is meant by Time Cost trade off?

Q2 Answer the following (10 marks each) [20]

A Explain types of recruitment methods in context to human resource management

B A PERT network comprises of 10 activities. They together with their 3 time estimate is shown in the following table: -

Activity	predecessors	to (weeks)	tm(weeks)	tp(weeks)
A	---	4	6	8
B	---	2	3	4
C	----	1	2	3
D	C	6	7	8
E	B, D	2	4	6
F	A, E	6	10	14
G	A, E	2	3	4
H	F	3	6	9
K	G	10	11	12
L	C	12	16	20
M	H, L	4	7	10

i)Draw PERT network and find variance of each activity
ii)Compute the expected completion time of the project
iii)What is the probability of the work being completed in 33 weeks?
iv)What will be the project duration corresponding to 90% probability?

Z - factor	Probability	Z - factor	Probability
+3.00	0.999	-1.00	0.159
+2.00	0.977	-2.00	0.023
+1.00	0.841	-3.00	0.001
0.00	0.500		

Q3 Answer the following (10 marks each) [20]

A The following table shows details of activities forming a work: -

Activity	A	B	C	D	E	F	G	H	J
Predecessors	----	----	----	B	B	A	D	D	F, G, E
Time in days	16	20	30	15	10	15	3	16	12

Draw network.
Find out duration of project and mark the critical path.
Find out EST, EFT, LST, LFT.
Work out the floats?

B Explain the following
i) Periodic progress report ii) Project life cycle

Q4 Answer the following (10 marks each) [20]

A Explain i) Unique features of construction industry ii) Role of inspection in quality control

B i) The following table shows data for each activity so as to complete the project. The contract includes a penalty clause of Rs 100/ day over 17 days of work. The overhead cost per day (indirect cost) is Rs 160/day. The cost of completing all activities in normal time is Rs 6500/-

Activity	i-j	Normal duration (days)	Crash duration (days)	Cost slope Rs/day	Labour per day
A	1-2	6	4	80	2
B	1-3	8	4	90	6
C	1-4	5	3	30	4
D	2-4	3	3	-	5
E	2-5	5	3	40	4
F	3-6	12	8	200	8
G	4-6	8	5	50	3
H	5-6	6	6	-	2

Find i) Critical Path, Normal Project duration and associated cost and Critical Activities.
ii) Minimum duration and corresponding cost.
iii) Optimum Time Cost Combination and plot time cost curve.

Q5 Answer the following (10 marks each) [20]

A Explain ABC analysis with the aid of graph with respect to material managements inventory control. Provide the broad policy guidelines for selective control for A, B and C items.

B Explain the following
i) Explain the process of updating with the help of flow chart.
ii) Construction Safety Measures

Q6. Answer any four of the following (5 marks each) [20]

A Acts in Construction Industry
B Causes of cost over run and time over run.
C Bar chart and its limitation
D Matrix organization
E Occupational Health Hazard

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