

(3 HOURS)

[Total Marks: 80]

N.B: 1) Question No. 1 is compulsory.

2) Attempt any three questions out of remaining five questions.

3) Assume suitable data, if required.

4) Figures to the right indicates full marks

- Q.1 a) Explain Principles of management given by Mr. Henry Fayol. -----10M.
b) Explain the functions covered by Construction Management. -----10M.

- Q.2 a) b) Details of activities of a construction project are given below. Draw network.
Identify critical path. Determine values of total float, free float & independent
Float of all the activities. -----12 M.

Activity	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Preceding Activity	--	A	A	B	D	D	D	B	C,E	G	F,I,J	K	G,H	M
Duration (days)	5	2	6	12	10	9	5	9	1	2	3	9	7	9

- b) What is Gantt bar chart? Also explain its drawbacks. ----- 08M

- Q.3 a) Q.1) Following is the data of the associated with PERT Project.

Activity	A	B	C	D	E	F	G
Preceding activity	-	---	A	C	A	B	C & D
to (days)	6	5	4	4	4	2	4
tm(days)	9	8	7	7	7	5	10
tp (days)	12	17	22	16	10	8	22

Z	-3	-2	-1	0	1	2	3
P (%)	0.13	2.28	15.87	50	84.13	97.72	99.87

- i) Determine the variance of the project.
ii) What is the probability of completing the project in 29 days?
iii) What is the scheduled duration with 90% probability? -----10M.
- b) Define time and cost overrun. What are the common causes of time and cost overruns?
Explain the corrective measures for the same. ---- 10 M.

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Q.4 a) Following Table shows activities, their durations and labour requirements:

Activity	A(10-20)	B(10-30)	C(20-50)	D(30-40)	E(30-50)	F(40-50)
Duration	8	11	6	5	8	5
Labours	3	4	2	5	3	3

i) Prepare histograms based on EST & LST Schedule.

ii) Which schedule you will prefer & why?

b) Explain: - i) Resource Levelling ii) Resource Smoothing.

Q.5a) Determine the optimum cost and optimum duration for the project. The data for each activity of the network is given in the following table.

Indirect cost = Rs.160 / per day.

Activity	Normal Time (days)	Crash Time (days)	Normal Cost(Rs.)	Crash Cost(Rs.)
10-20	2	2	1000	1000
10-30	7	3	500	900
20-30	6	3	300	420
20-40	5	4	200	250
30-40	0	0	0	0
30-50	9	4	600	900
40-60	11	6	600	1000
50-60	6	3	700	910

b) Define Accident. Which are the main causes of accidents on construction sites?

Also explain the precautionary measures to avoid accidents.

Q.6) Write notes on followings: (Any five)

- 1) Role of inspection in quality control.
- 2) Principles of accounting.
- 3) Economic appraisal criteria's.
- 4) Work Breakdown Structure.
- 5) Time Value of Money.
- 6) A-B-C analysis
- 7) Man-power planning.