AQ – 2815

First Semester M. E. Civil (Construction Engg. and Management) Examination

CONSTRUCTION PROJECT PLANNING AND MANAGEMENT

Paper – 1 CMO 1

P. Pages : 4

Time : Three Hours] [Max. Marks : 80

Note : (1) Separate answer book must be used for each section in the subject Geology, Engineering material of civil branch and Separate answer book must be used for Section A and B in Pharmacy and Cosmetic Tech.
(2) Due credit will be given to neatness and adequate dimensions.
(3) Assume suitable data wherever necessary.
(4) Illustrate your answer wherever necessary with the help of neat sketches.

SECTION A

1. (a) Discuss in brief 'Feasibility phase' of Construction Project. 7

   (b) Discuss important traits of project co-ordinator. 6

OR

2. (a) Discuss in brief different phases through which a construction project passes. 7

   (b) Enlist tasks related to pre-project phase. 6

3. (a) Write step by step method of preparing preliminary estimate based on PAR. 7

   (b) Discuss in brief project cash flow diagram and company cash flow diagram. 6

OR

4. (a) How is the cost statement prepared ? Discuss its importance in brief. 7

   (b) Discuss in brief :—

   (i) Pay back period.

   (ii) Average annual rate of returns. 6

5. (a) Explain PERT with suitable example. 7

(b) For given data draw a network showing critical path, calculate project duration and prepare complete activity table showing EST, LST, EET, LFT and floats :— 7

Activity	Duration
1–2	4
1–3	3
1–4	10
2–4	7
2–5	5
3–4	5
4–5	4
4–6	6
4–7	8
5–6	6
5–7	10
6–7	9

OR

6. (a) Compare AOA and AON network for construction planning. 7

(b) Analyze the following project. Calculate expected duration, standard deviation and variances for activities. 7

Predecessor event	Successor event	t_o	t_m	t_p
10	20	3	6	10
10	30	7	9	12
10	40	6	7	12
20	40	0	0	0
20	60	8	12	17
30	70	8	13	19
40	50	10	12	15
50	60	8	9	10
50	100	13	16	19
60	80	12	14	15
70	90	10	13	17
80	100	4	7	10
90	110	10	12	14
100	110	6	8	12

SECTION B

7. (a) Write steps involved in implementation of earned value method. 6

(b) Find optimum duration of following project. Indirect cost = Rs. 90/day.

Activity	DurationCost			
	Normal	Crashed	Normal	Crashed
(1, 2)A	5	4	60	90
(1, 4)B	7	5	150	250
(1, 3)C	3	2	30	60
(2, 4)D	6	4	150	250
(3, 4)E	3	3	100	100
(2, 5)F	9	7	115	175
(4, 5)G	4	2	100	240

7

OR

8. (a) Write a note on S–curve. 6

(b) Find optimum duration for the following project. Indirect Cost = Rs. 200/ day.

Activity	Predece-ssor	Duration		Cost	
		Normal	Crashed	Normal	Crashed
A	–	5	4	1000	1200
B	A	8	6	2000	3000
C	–	11	8	7000	10000
D	–	6	5	6000	6500
E	D	6	4	12000	12500

7

9. (a) Write step by step process for determination of optimum mark–up. 7

(b) Explain the causes of disputes that may lead project closure. 6

OR

10. (a) What are the common causes for arise of claim ? 6

(b) Explain various bidding models in construction industry in India. 7

11. (a) What are the advantages associated with project management softwares ? 7

(b) Explain the typical project performance failure attributes for construction project. 7

OR

12. (a) Explain theory of 3 C's and Iron triangle. 7

(b) Enlist various construction project mana-gement softwares. Explain any one of them. 7