* 3 6 4 1 *

Construction Planning, Scheduling & Management
(1010)

P. Pages : 3

Time : Three Hours **Max. Marks : 100**

Instructions to Candidates :
1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any five** questions.
2. Use of 'Z' table is permitted.

1. a) Describe WBS & Write its importance in project planning prepare WBS of G+1 bungalow project. **10**

b) For the network shown in the figure below, following conditions prevail on site. **10**

Conditions prevail on site.

i) Activity 1-3 was completed as planned.

ii) Activity 1-2 took lesser time, 9 days instead of 11 days.

iii) Activity 2-3 commenced following activity 1-2 & was finished 4 days.

iv) Activity 3-5 was commenced following 2-3 & still requires 7 more days to finish.

v) Activity 1-4 is delayed & still it requires 11 more days to finish.

vi) Activity 4 - 6 will require 10 days for its completion instead of 7 days originally estimated.

vii) Time required to do 5-8 is 11 instead of 7 days.

viii) No other activity is started & estimates of original time for these activities still appears to be accurate. Update the network from given information & fined revised duration & critical path.

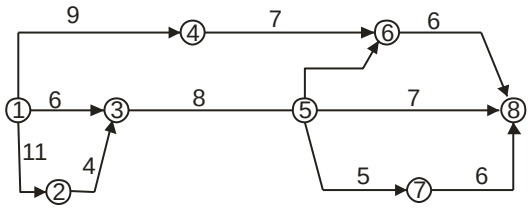

Fig 1 (b) Given Network

2. a) Consider the example of construction of a compound wall. From given data, find (i) critical path & project duration, (ii) Crash network to find optimum duration & minimum cost. Consider indirect cost as ₹ 2100/- per day. **15**

Activity	Successor	Normal Duration (a)	Normal Cost (₹)	Crash Duration(d)	Crash Cost (₹)
Line Out	Excavation & PCC	3	2500/-	1	3900/-
Excavation & PCC	VCR Masonry	5	9000/-	3	11000/-
UCR Masonry	Back Filling Racking & Pointing	12	38000/-	10	47000/-
Back Filling	Coping, Fixing of Gate	1	3700/-	1	3700/-
Racking & Pointing	Fixing of Gate	4	6500/-	2	8000/-
Coping	Site Cleaning	3	4800/-	2	5700/-
Gate fixing	Painting	2	11,000/-	1	14000/-
Painting	Site Cleaning	2	4200/-	2	4200/-
Site Cleaning	-	2	3500/-	1	4200/-

b) Write the rules of compressing the network. **5**

3. a) From the given data, find the probability of completion of the project in -(i) 35 weeks (ii) 30 weeks & iii) 25 weeks. **15**

Activity	1-2	1-3	2-4	2-5	3-4	3-5	4-5
t_o	6	5	4	4	4	2	4
t_m	9	8	7	7	7	5	10
t_p	18	17	22	10	16	8	22

b) Compare CPM & PERT network techniques. **5**

4. a) Carryout resource levelling for following data. **10**

Activity	1-2	1-3	1-4	1-6	2-5	3-4	4-5	5-6
Duration (days)	4	5	8	8	6	4	6	8
Man power required per day	6	12	8	18	16	14	4	2

b) What are the basic functions of management ? Discuss with example. **10**

5. a) What is the importance of good site layout ? Draw site layout for G+11 story 4 apartments. Assume plot area as suitable & draw basic amenities & project requirements. **10**

b) Discuss cost controlling tools. **10**

6. a) Define bar chart. Draw a bar chart for the project given in Q. 2 (a) of compound wall project. **10**

b) Discuss the advantages & limitations of L.O.B. techniques. **10**

7. Write notes on. **20**

a) Simplex method of Linear programming.

b) Role of project manager in success of project.

c) Importance of cost control & its objectives.

d) When & why project is updated ?

****