Roll No. ....

Total Pages : 05

BT-5/D-14

8533

PROJECT PLANNING AND MANAGEMENT

CE-309-E

Time : Three Hours]   [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least one question from each Unit. All questions carry equal marks.

Unit I

1. (a) Discuss functions and objective of construction management.   14
   (b) Differentiate between working drawing and completion drawing.   6

2. (a) Discuss various types of Contract.   10
   (b) Discuss various arbitration clauses in contract—Arbitration prooess, in construction industry.   10

Unit II

3. (a) Discuss various stages in construction.   12
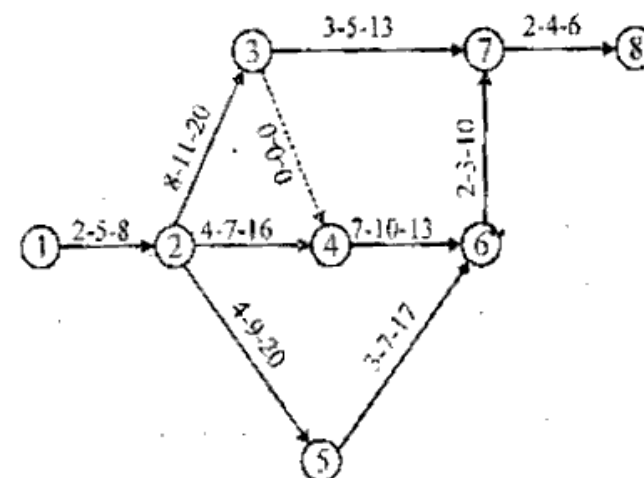   (b) Discuss merits and demerits of line and staff organizational structure.   8

4. List various principles of organization. Discuss any *four* of them.   20

Unit III

5. (a) Differentiate PERT and CPM network.   8
   (b) Network for a construction project, with the three time estimates of each activity marked. Determine :
      (i) Critical path and its standard deviation
      (ii) Probability of completition of project in 40 days
      (iii) Time duration that will provide 95% probability of its completion in time.   12

N.D.	Probability	
+ -0	50.0	50.0
+ -0.5	69.2	38.8
+ -1.0	84.1	15.9
+ -1.5	93.3	6.7
+ -2.0	97.7	2.3
+ -2.5	99.4	0.6
+ -3.0	99.9	0.1

6. (a) Draw a network with the following statements :

   (i) A is the first activity of the project.

   (ii) B, C and D follow A and can be done concurrently.

   (iii) E and G cannot begin until C is completed, and can be performed simultaneously.

   (iv) F is the immediate successor to activities B and E.

   (v) H and K run in parellel, and both succeed G.

   (vi) L succeeds F and H

   (vii) I and J are immediate successor activity to activity D

   (viii) M and N are immediate successor to I and K. However, both M and N can be performed concurrently.

   (ix) Activities O and P are the last activities. Activity O is the immediate successor to N and L. Activity P is the immediate successor to M and J. Draw the network and number the events.   **15**

   (b) What do you understand by work breakdown structure ?   **5**

Unit IV

7. List the non-destructive tests for concrete structures and explain any *two* in detail stating their suitability and practicability.   **20**

8. For a project the job numbers and the sequence for the jobs in a project are shown in table below. The normal time and cost and crash time and cost are also given. The indirect cost @ Rs. 200 per day. http://www.kuonline.in

   (i) What is the normal cost and duration of the project ?

(ii) If all the activities are crashed indiscriminately, what will be the procjet cost and duration ?

(iii) Calculate the optimum cost and corresponding duration for the project.

Activity	Normal Cost	Normal Time	Crash Cost	Crash Time
1–2	300	4	600	2
1–3	800	8	880	6
2–3	600	5	800	3
2–4	400	9	775	6
3–4	250	3	325	2