

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER-1 (NEW) EXAMINATION – WINTER 2018

Subject Code: 3711408**Date: 01/01/2019****Subject Name: Planning, Scheduling & Control of Construction Projects****Time: 02:30 PM To 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full mark.

- Q.1** (a) Explain the parameters that can lead a construction project to success. **07**
 (b) Discuss the effectiveness of planning, scheduling and controlling in construction projects. **07**
- Q.2** (a) Write short note on Construction Project Life Cycle. **07**
 (b) Explain the difference between CPM and PERT. **07**
- OR**
- (b) Write difference between AOA and AON network **07**
- Q.3** (a) Explain following terms with suitable example: (1) Project Maturity (2) LOB **07**
 (b) Enlist various types of organization structures and explain any one in detail. **07**
- OR**
- Q.3** (a) Discuss the WBS for construction of Engineering college. **07**
 (b) The network for certain project is given in below table along with estimated time. **07**
 Compute the activity times, total float and free float for each activity. Locate the critical path on the network.

Activity	1-2	1-3	2-8	3-4	4-5	4-7	4-8	5-6	6-7	7-8	7-9	8-9	9-10
Duration (days)	36	4	2	2	15	9	10	4	9	9	8	20	20

- Q.4** (a) Write importance of project management software in construction sector. **07**
 (b) Explain Following: (1) Resource Allocation (2) PNA **07**
- OR**
- Q.4** (a) Explain the importance of Updating in network. Why updating is required and when it need to update? **07**
 (b) Determine the critical path using PERT analysis. Also determine the probability of completing the project in 35 days for the given data. **07**

Activity	1-2	1-3	2-4	3-4	4-5	2-5	3-5
to	6	5	4	4	4	4	2
tL	9	8	7	7	10	7	5
tP	18	17	22	16	22	10	8

Consider probability from below table with respect to value of Z.

Z(+)	Probability (%)
0.9	81.59
1.0	84.13
1.1	86.43
1.2	88.49

Q.5 (a) The data for the duration and cost of each activity are given in below table. **07**

Activity	Normal Duration (weeks)	Normal Cost (Rs.)	Crash Duration (Weeks)	Crash Cost (Rs.)
1-2	6	7000	3	14500
1-3	8	4000	5	8500
2-3	4	6000	1	9000
2-4	5	8000	3	15000
3-4	5	5000	3	11000

The direct cost of the project is Rs. 3000 per week. Determine the optimum duration of the project and the corresponding minimum cost.

(b) Discuss the Factors influencing Construction Quality. **07**

OR

Q.5 (a) Write a short note on: CONQUAS. **07**

(b) Explain following: (1) Cost Control (2) Cost appraisal **07**

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