

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE SEMESTER–VIII • EXAMINATION – SUMMER 2017**

**Subject Code: 2181501****Date: 29/04/2017****Subject Name: Project Management****Time: 10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

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

- Q.1** (a) What is a project? How to conceptualize the project? How to identify the right project? **07**  
 (b) Explain different phases of Project Management. Also mention steps for it. **07**
- Q.2** (a) How will you decide whether a new project is feasible or not? **07**  
 (b) What are the different factors to be considered during technical appraisal of a project? **07**

**OR**

- (b) DIC is considered to be a single window service organization for small entrepreneurs. - Describe in detail. **07**
- Q.3** (a) How networks help management? What care one should take for better drawing of network diagrams? **07**  
 (b) Differentiate between 'Activity oriented diagram' and 'Event oriented diagram'. **07**

**OR**

- Q.3** (a) What are the objectives of using network analysis? What is dummy arrow and why is it used? **07**  
 (b) Discuss how CPM can be useful in the following situations: **07**  
 I. Custom built production of ships.  
 II. Major repair overhaul and maintenance.  
 III. Preparation of manual accounts.  
 IV. Building and construction works.
- Q.4** (a) Explain the role of break even analysis for project appraisal. **07**  
 (b) From the data given below, draw the PERT network. **07**

Activity	Optimistic Time (Week)	Most likely Time (Week)	Pessimistic Time (Week)
10 - 20	8	12	20
10 - 30	7	10	18
20 - 40	6	9	22
30 - 40	5	8	18
40 - 50	6	12	24
20 - 50	5	9	12
30 - 50	4	7	10

Determine the critical path, its duration, earliest and latest allowable occurrence time and slacks of all events.

**OR**

- Q.4** (a) Discuss in brief : (i) Free float (ii) Independent float **07**  
 (iii) Total float (iv) Forward pass method.

- (b) Draw the network for the following project and compute the earliest and latest time for each event and also find critical path. **07**

Activity	Immediate Predecessor	Time
1 - 2	-	6
1 - 3	-	5
2 - 4	1 - 2	7
3 - 4	1 - 3	3
4 - 5	2 - 4	2
4 - 6	2 - 4 & 3 - 4	8
5 - 7	4 - 5	9
6 - 7	4 - 6	5
7 - 8	6 - 7 & 5 - 7	4

- Q.5** (a) What are the components of cost of projects? Discuss them in detail. **07**  
 (b) The time estimates for three activities P, Q and R are as follows : **07**

Activity	Optimistic Time	Most likely Time	Pessimistic Time
P	12	14	16
Q	8	10	14
R	7	12	15

Determine expected time and variance for each activity. Which activity has more reliable time estimates?

**OR**

- Q.5** (a) Discuss in brief the resources allocation problem. What are the methods of solving the problem? **07**  
 (b) Based on the data given below, determine the optimum duration of the project and the corresponding minimum cost. **07**

Activity	Normal		Crash	
	Duration (week)	Cost (Rs.)	Duration (week)	Cost (Rs.)
1 - 2	7	18000	3	25500
1 - 3	9	15000	5	19500
2 - 3	5	17000	1	20000
2 - 4	6	19000	3	26000
3 - 4	5	16000	3	22000

The indirect cost of the project is Rs. 10000 per week. Draw the time-scaled version of network at each step of crashing.

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