GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER – I (New)– EXAMINATION – WINTER-2019

Subject Code: 3711408   **Date: 02-01-2020**

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 marks.**

Q.1	**(a)**	What are the core functions of Project Management? Explain in detail.	**07**
	(b)	Explain the difference between CPM and PERT.	**07**
Q.2	**(a)**	Write a short note on LOB. Explain the advantages of LOB.	**07**
	(b)	What is an informal organization & mention characteristic of informal organization?	**07**

OR

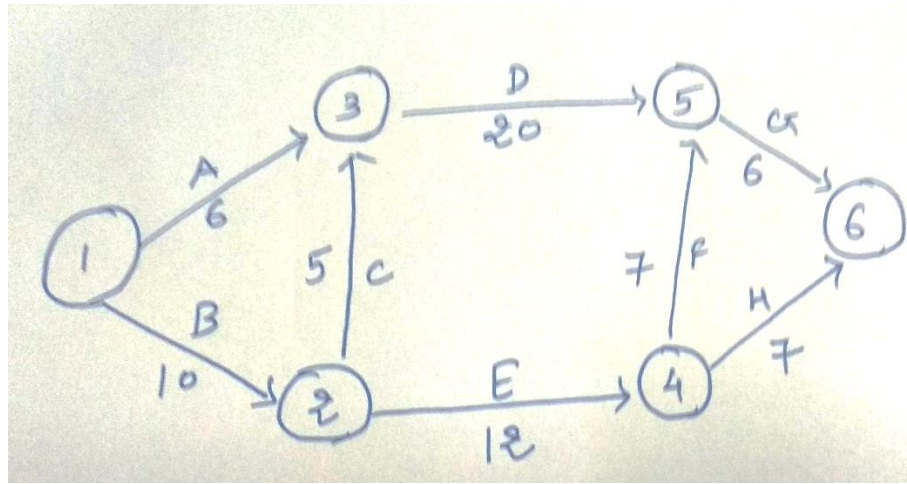|			
	(b)	Draw the WBS **(Any one)**	**07**
		a. Residential Building	
		b. Pumping Station	
		c. Primary School.	
Q.3	**(a)**	Explain the term Updating. Why updating in a network is required and when to update?	**07**
	(b)	Explain the impact of value engineering in cost validation.	**07**

OR

Q.3 **(a)** Draw the network diagram and find out Project duration, Critical path, EST, EFT, LST and LFT for the given data. **07**

Sr. No.	Activity	Activity Row	Duration	Sr. No.	Activity	Activity Row	Duration
1	A	1-2	8	7	G	4-5	8
2	B	1-3	6	8	H	4-6	10
3	C	1-4	10	9	I	5-6	2
4	D	2-5	8	10	J	5-7	10
5	E	2-7	15	11	K	6-7	8
6	F	3-5	10	12	L	7-8	7

(b) For a given network in figure, update the project after 14 days with following conditions. **07**

1) Activity 1-2 and 1-3 are finished as per plan
2) Activity 2-4 is still going on and will need 16 more days for its completion
3) Activity 4-5 faces some problem and need 10 more days for completion
4) Activity 4-6 can be early completed in 5 days instead of planned 7 days
5) All other activities are as per planned data.

Q.4 (a) Write Short note on : **(Any two)** **07**
(1) Resource Leveling (2) Project Maturity (3) Resource Smoothening
(4) PERT

(b) Explain the term Resource allocation and differentiate between resource smoothening and resource levelling. **07**

OR

Q.4 (a) For the given data draw time grid and histogram **07**

Sr. No.	Activity Arrow	Duration	resources	Sr. No.	Activity Arrow	Duration	resources
1	0-1	2	4	7	4-7	6	3
2	1-2	3	3	8	5-7	6	6
3	1-2	4	3	9	6-8	5	2
4	2-4	2	5	10	7-9	4	2
5	3-5	4	3	11	8-9	4	9
6	3-6	3	4	-	-	-	-

(b) A firm has 50 workers and one unit of each A, B and C machine available for carrying out a work. The activities comprising the project their duration and resource requirement are as follows **07**

Sr. No.	Activity Arrow	Duration	resources	Sr. No.	Activity Arrow	Duration	resources
1	1-2	5	A	6	3-5	3	C
2	1-3	2	B	7	4-7	4	B, C
3	1-4	5	A, C	8	5-6	2	B
4	2-6	6	B	9	6-7	3	B
5	2-5	8	A	-	-	-	-

Q.5 (a) Write short notes on : **(Any Two)** **07**
(1) CONQUAS (2) TQM (3) Benchmarking (4) FMEA

(b) Explain: Cost Planning, Cost Budgeting, and Cost Control. **07**

OR

Q.5 (a) Write rules of Fulkerson for Numbering of Event. **07**

(b) Define the given terms: 1) Parallel activity, 2) Merge Event, 3) Sequential activity, 4) Cost Slope, 5) Burst Event, 6) Dummy activity, 7) Critical path. **07**

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