GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–VII (NEW) EXAMINATION – WINTER 2024

Subject Code:3170614   **Date:04-12-2024**

Subject Name: Construction Engineering and Management
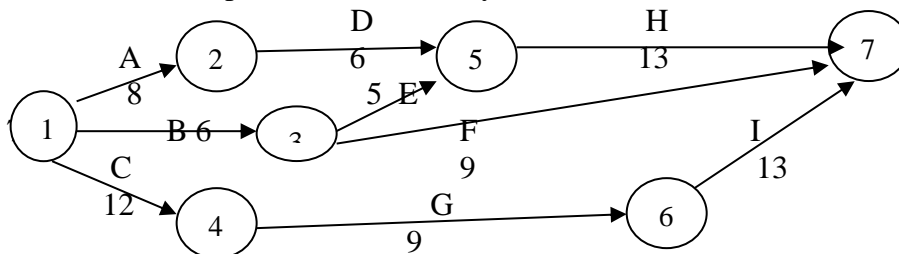
Time:10:30 AM TO 01:00 PM   **Total Marks:70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Explain the importance of construction management.	**03**
	(b)	Discuss the different phases of construction management.	**04**
	(c)	Draw a Work Break Down structure of GSRTC Bus Station.	**07**
Q.2	**(a)**	Discuss the sources of fund availability in construction project.	**03**
	(b)	Define the following 1) Activity 2) Dummy Activity 3) Event 4) parallel activity	**04**
	(c)	Discuss Bar chart technique with construction of compound wall example.	**07**
		OR	
	(c)	Discuss Line of Balance, Mile stone chart and Compare with each other.	**07**
Q.3	**(a)**	Explain the function of management as organizing, staffing	**03**
	(b)	Justify "inventory is a heart of material management."	**04**
	(c)	Develop a Job/ site layout for construction of Bridge.	**07**
		OR	
Q.3	**(a)**	Differentiate between float and slack.	**03**
	(b)	Compare resource leveling vs. resource smoothening	**04**
	(c)	Discuss updating. Explain in detail procedure for updating.	**07**
Q.4	**(a)**	Explain the importance of crashing.	**03**
	(b)	Describe the lean construction concept of project management	**04**
	(c)	From the following network and find out activity E duration 5, project duration, critical path, Critical activity	**07**

OR

Q.4	**(a)**	Discuss the various types of precedence relationship with example.	**03**
	(b)	Explain the use of Building Information Modeling(BIM) in construction management.	**04**

(c) Draw the network from following three time estimate, find out total project duration. **07**

Activity	Optimistic time	Pessimistic time	Most likely time
1-2	5	15	7
1-3	4	12	8
2-4	3	13	8
3-5	4	18	8
4-5	7	17	12
5-6	2	10	6

Q.5 **(a)** Identify the role of inspection in Quality control. **03**

(b) Describe the Construction Quality Assessment System (CONQUAS) **04**

(c) Discuss the causes; effects and preventive measure of accident occur on construction site. **07**

OR

Q.5 **(a)** Discuss the factor affecting for owning and operating cost. **03**

(b) Discuss the importance of ISO 45001 on construction site. **04**

(c) Describe the Tunnel Boring Machine with its use, function, advantages etc **07**

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