Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE MINOR - SEMESTER–VI EXAMINATION – SUMMER 2024

Subject Code:116AC01   **Date:27-05-2024**

Subject Name:Design of Formwork

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)**	Give the requirements of a Formwork.	**03**
	(b)	Explain the factors affecting selection of Formwork.	**04**
	(c)	Give the characteristics of good quality Timber and Steel Formwork.	**07**
Q.2	**(a)**	Write short notes on slip formwork.	**03**
	(b)	What is lateral pressure? Give the formula for finding out lateral pressure on form work.	**04**
	(c)	Find the lateral pressure using ACI formula for the wall of size 15 m, 3 m, 0.2 m. Assume rate of pour is 10 m^3/h and ambient temperature as 20°C. The product of Cw and Cc may be considered equal to 1.	**07**

OR

	(c)	For the data given below, compute the lateral pressure on formwork as per CIRIA formula and also draw the design pressure distribution.	**07**

D (weight density of concrete) =25 kN/m3
C1 (shape constant) =1
R, rate of rise =1 m/h
C2, concrete constituent factor = 0.3
Temperature of concrete (°C) = 25
Temperature co-efficient = 0.77
H, form height = 6.15 m
h,pour height = 6 m

Q.3	**(a)**	List out the salient features of conventional wall formwork.	**03**
	(b)	Write short notes on formwork for stepped footing.	**04**
	(c)	Give the steps involved in Column Formwork Design.	**07**

OR

Q.3	**(a)**	Explain Climbing formwork for wall.	**03**
	(b)	Write short notes on formwork for Raft foundation.	**04**
	(c)	Give the steps involved in Slab Formwork Design.	**07**
Q.4	**(a)**	What are the various load acts on formwork.	**03**
	(b)	Write about Allowable Bending Moment, Shear, and Deflection for 12 mm and 19 mm Thick Plywood for wall formwork.	**04**
	(c)	Formula for Spacing Based on Bending Moment, Shear and Deflection for Simply Supported Ends for wall formwork.	**07**

OR

Q.4 **(a)** Give various steps involved in wall formwork design.   **03**
(b) Describe with figure "L" shaped column formwork.   **04**
(c) Explain Formula for Spacing Based on Bending Moment, Shear and Deflection for Continuous Ends Conditions for wall formwork.   **07**

Q.5 **(a)** Describe the way how to avoiding formwork failure.   **03**
(b) Write short note on reuse and recycling of formwork material.   **04**
(c) Explain the steps for achieving formwork economy in column construction.   **07**

OR

Q.5 **(a)** write about the causes of failure of formwork.   **03**
(b) Write short note on Safety precautions used in formwork and false work.   **04**
(c) Explain in detail design steps of slab and beam formwork.   **07**

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