Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2024

Subject Code:3150610 Date:18-05-2024

Subject Name:Concrete Technology

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.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	What is compaction? Why compaction is needed?	**03**
	(b)	Write a short note on aerated concrete.	**04**
	(c)	Explain about rebound hammer test.	**07**
Q.2	**(a)**	What are the purposes of admixtures in concrete?	**03**
	(b)	Write a short note on bulking of sand.	**04**
	(c)	State factors affecting compressive strength of concrete and explain any four in detail.	**07**
		OR	
	(c)	Explain the factors affecting permeability of concrete.	**07**
Q.3	**(a)**	State the major compounds of ordinary Portland cement and its importance.	**03**
	(b)	Explain different types of slump with sketch.	**04**
	(c)	Explain ultrasonic pulse velocity test.	**07**
		OR	
Q.3	**(a)**	Explain the effect of water cement ratio on the strength of concrete.	**03**
	(b)	Explain importance of grading of aggregates.	**04**
	(c)	List various methods of concreting under water and explain ‘tremie’ method.	**07**
Q.4	**(a)**	Explain mechanism of sulphate attack on concrete.	**03**
	(b)	Define Durability. Explain its significance.	**04**
	(c)	Explain wet process for manufacturing of cement.	**07**
		OR	
Q.4	**(a)**	Explain segregation of concrete.	**03**
	(b)	Describe the test for determining standard consistency, and initial setting time of cement.	**04**
	(c)	Explain Indian Standard Mix design method as per IS: 10262 (2009) with its salient features.	**07**
Q.5	**(a)**	Explain need of curing. State different methods of curing.	**03**
	(b)	Define workability and discuss factors affecting workability.	**04**
	(c)	What is self-compacting concrete? And what are the advantages and disadvantages of using it?	**07**
		OR	
Q.5	**(a)**	Briefly explain alkali-aggregate reaction.	**03**
	(b)	Differentiate between high-strength and high-performance concrete.	**04**
	(c)	Explain various causes of corrosion of steel in concrete and its remedial measures.	**07**

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