

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023

Subject Code:3144004**Date:11-07-2023****Subject Name:Concrete Technology****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 factors affecting permeability of concrete	03
	(b) Explain the advantages of concrete over other material	04
	(c) List the factors affecting the workability of concrete and explain any four out of them.	07
Q.2	(a) What is shrinkage? Give the classification of shrinkage.	03
	(b) What is durability of concrete? Enlist factors affecting durability of concrete.	04
	(c) Explain factors affecting creep of concrete.	07
	OR	
	(c) What is permeability of concrete? Enlist factors affecting permeability of concrete. Explain any one in detail.	07
Q.3	(a) Explain the effect of water cement ratio on the strength of concrete.	03
	(b) What is soundness of cement? Explain soundness test of cement.	04
	(c) Explain quality control of concrete and factors affecting it.	07
	OR	
Q.3	(a) Explain in detail Light Weight concrete	03
	(b) Explain hydration process of cement.	04
	(c) Explain about rebound hammer test.	07
Q.4	(a) Give difference between setting and hardening of cement.	03
	(b) Write short note on: Slip form technique.	04
	(c) List different tests for hardened concrete. Explain Split Cylinder test.	07
	OR	
Q.4	(a) Explain bulking of aggregates.	03
	(b) Explain Aggregate Crushing value test for coarse aggregate.	04
	(c) What do you understand by soundness of cement? Explain any one test to determine the soundness of cement.	07
Q.5	(a) Write short note on chloride attack.	03
	(b) Differentiate between setting and hardening of cement.	04
	(c) Define nominal mix and design mix of concrete. Explain step by step procedure of IS method of mix design.	07

OR

- Q.5**
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|------------|---|-----------|
| (a) | Explain grading zones of Fine Aggregate as per IS: 383. Draw percentage passing curve for any one | 03 |
| (b) | What do you understand by durability of concrete? State factors affecting durability of concrete | 04 |
| (c) | Explain alkali aggregate reaction. State and explain factors promoting and controlling alkali aggregate reaction. | 07 |
