

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2024****Subject Code:3144004****Date:21-11-2024****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) Explain Bogue's compound in brief.	03
	(b) Explain sulphate attack on concrete.	04
	(c) List the factors affecting the workability of concrete and explain any four out of them.	07
Q.2	(a) Give differences between setting and hardening of the cement.	03
	(b) Write a short note on bulking of sand.	04
	(c) Explain slump test in detail.	07
	OR	
	(c) Explain the Ultrasonic Pulse Velocity Test for hardened concrete.	07
Q.3	(a) Enlist the different tests that can be used to measure the workability of concrete.	03
	(b) Write a short note on plasticizers in concrete.	04
	(c) Explain the procedure to test Initial and Final setting time of cement in laboratory.	07
	OR	
Q.3	(a) Give the factors that affect the permeability of the concrete	03
	(b) Write a short note on Ready Mix Concrete.	04
	(c) Explain the step by step procedure to measure the soundness of the cement in laboratory.	07
Q.4	(a) State the differences between fresh concrete and hardened concrete.	03
	(b) Explain shrinkage of concrete and factors affecting it.	04
	(c) Explain the factors affecting for quality of concrete.	07
	OR	
Q.4	(a) What does the bleeding of the concrete means?	03
	(b) Draw sketch of Rebound Hammer showing its parts.	04
	(c) What does segregation of concrete means? Explain the factors affecting it.	07
Q.5	(a) What do you mean by creep in concrete? Which factors are responsible for it?	03
	(b) What is curing? Explain membrane concrete.	04
	(c) With the help of neat sketch explain the tremie method for under-water concreting.	07
	OR	
Q.5	(a) Briefly explain Gel-Space Ratio.	03
	(b) Explain fibre reinforced concrete.	04
	(c) Explain the procedure for testing the compressive strength of concrete.	07
