

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3170616****Date:08-12-2023****Subject Name: Retrofitting of structures****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) Enlist causes of distress in reinforced concrete structures.	03
	(b) Enlist various types of Non- Destructive Tests.	04
	(c) Explain the durability of concrete in detail.	07
Q.2	(a) Enlist various thermal properties of concrete and explain coefficient of thermal expansion.	03
	(b) Write a short note on fiber reinforced concrete.	04
	(c) Describe with neat sketches the different types of cracking observed in various RCC elements such as beams, slabs and columns.	07
	OR	
	(c) Give various types of shoring and explain raking shore with sketch.	07
Q.3	(a) Differentiate: (i) Destructive testing and Non-destructive testing (ii) Porosity and Permeability	03
	(b) Explain injection grouting for RCC buildings.	04
	(c) Explain the importance of a concrete cover in an RCC structure. Provide IS:456 guidelines for nominal cover.	07
	OR	
Q.3	(a) Explain Routine and Periodic maintenance.	03
	(b) How to carry out repairs of leakage from terrace?	04
	(c) Explain weathering effect freezing and thawing on RCC structure.	07
Q.4	(a) What exactly is a condition evaluation? List the objectives of the condition evaluation.	03
	(b) Write a short note on the fiber wrap method.	04
	(c) List out various construction errors which leads to the deterioration of concrete structure.	07
	OR	
Q.4	(a) Enlist out various physical and chemical deteriorations	03
	(b) How would you ensure Quality control in Concrete construction?	04
	(c) Differentiate: (i) Repair and Retrofitting (ii) Active crack and Passive crack (iii) Drying shrinkage and Plastic shrinkage	07
Q.5	(a) Write short note on polymer impregnated concrete.	03
	(b) Write a short note on procedure of Guniting	04
	(c) Explain Alkali-aggregate reaction in detail.	07
	OR	
Q.5	(a) Explain Day to Day repair as per CPWD.	03
	(b) Make a brief note about vacuum concrete	04
	(c) Give various classifications of repair materials	07
