

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3174021****Date:08-12-2023****Subject Name: Repair and Rehabilitation 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) Explain main objectives of maintenance of building?	03
	(b) Draw schematic flowchart to illustrate the process of condition survey?	04
	(c) Describe classes of damage and repair classification in details.	07
Q.2	(a) Give various construction errors leads to the cracking and deterioration of concrete.	03
	(b) Discuss Epoxy as a repair material?	04
	(c) Explain pull out test with neat sketch.	07
	OR	
	(c) Explain rebound hammer test with neat sketch.	07
Q.3	(a) Distinguish between structural cracks and non-structural cracks with an example.	03
	(b) Differentiate between Strengthening Vs Retrofitting	04
	(c) Write the step-by-step procedure adopted in epoxy injection for repair works.	07
	OR	
Q.3	(a) How repairing of small crack carried out structures?	03
	(b) Which are the parameters required for selection of repair materials?	04
	(c) Explain in detail polymer modified mortars and concretes (PMM/PMC).	07
Q.4	(a) Describe performance requirements of repair systems	03
	(b) Write short note in visual inspection to assess fire damaged structures.	04
	(c) Explain alkali aggregate reaction. What are the factors promoting it? How it can be controlled?	07
	OR	
Q.4	(a) What is durability? Enlist factors affecting on durability	03
	(b) Write short note on effect freezing and thawing.	04
	(c) What is meant by carbonation of concrete? How is it determined in concrete? What are the limitations associated with it?	07
Q.5	(a) What is RCC Jacketing?	03
	(b) Write short note on fiber wrap technique.	04

(c) Write a short note on seismic retrofitting of beam and column. **07**

OR

- Q.5**
- (a) What are the precautions to be taken to prevent water leakages in roofs and sunken slab (floor) in toilet? **03**
 - (b) Which method you will adopt for strengthen the beam, if it is severely distress in flexure? Explain suggested method in brief. **04**
 - (c) Enumerate various advanced techniques used to enhance seismic resistance of structure. Explain 'Base Isolation' in details **07**
