

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER-VIII EXAMINATION- SUMMER 2020

Subject Code: 2180607

Date: 26/10/2020

Subject Name: Repairs & Rehabilitation of Concrete Structures

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.

	MARKS
Q.1 (a) Define: 1. Repair 2. Rehabilitation 3. Retrofitting	03
(b) Enlist different crack repair techniques. Explain any one in detail.	04
(c) Enlist various causes of distress and deterioration of concrete and explain any three in detail.	07
Q.2 (a) Define: 1. Durability of Concrete 2. Permeability of Concrete 3. Efflorescence	03
(b) Write short note on Ferro Cement.	04
(c) Explain parameter for selection of repair material.	07
OR	
(c) List various Non-destructive tests for assessment of strength of concrete. Explain any one in detail.	07
Q.3 (a) Write short note on shoring.	03
(b) What are the causes of damage in Masonry buildings?	04
(c) Enlist various crack repair techniques in concrete and explain any one in detail.	07
OR	
Q.3 (a) Explain Thermal properties of the concrete.	03
(b) Discuss Epoxy as a repair material.	04
(c) Enlist different systems of protection for reinforcing steel in RCC structure. Also discuss each in detail.	07
Q.4 (a) Mention steps for patch repair in RCC slab where carbonation depth has reached reinforcement level.	03
(b) Explain how to improve durability of concrete in sea water.	04

- (c) What is carbonation? State and explain the factor affecting the rate of carbonation. Explain the method to test depth of carbonation. 07

OR

- Q.4** (a) Differentiate between Porosity and Permeability. 03
(b) Differentiate between retrofitting and rehabilitation of structures. 04
(c) Explain jacketing. Discuss repair and strengthening of columns by jacketing technique. 07
- Q.5** (a) Write short note on Polymere Concrete. 03
(b) Explain visual inspection to assess fire damaged structures. 04
(c) Explain long term health monitoring of structures. 07

OR

- Q.5** (a) Write short note on fiber wrap technique. 03
(b) Enlist different crack repair techniques. Explain any one in detail 04
(c) Discuss various types of maintenance. Also explain importance of building maintenance 07

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