

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION – WINTER • 2014

Subject Code: X80605

Date: 03-12-2014

Subject Name: Repairs and rehabilitation of structures

Time: 02:30 pm - 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.

- Q.1 (a) What are the objectives of Condition Survey. Explain any two stages of conditional survey in detail. 07
- (b) List down the various Construction and Design deficiencies which causes distress in RCC structures. 07
- Q.2 (a) What are the major causes of deterioration in Concrete structures. List the various signs of distress in concrete structures. 07
- (b) What is the importance of the subject of Repairs & Rehabilitation of structures. Distinguish between Repair & Rehabilitation. 07
- OR
- (b) List down the Causes and Symptoms against the Problems mentioned below (any four): 07
- (a) Alkali Silica Reaction
 - (b) Corrosion of reinforcement
 - (c) Construction errors
 - (d) Design Errors
 - (e) Settlement and Movement of foundation
- Q.3 (a) Explain briefly the Structural & Non-Structural cracks in buildings. Support your description with examples for each type. 07
- (b) What is the importance of the field and laboratory testing for damage assessment of the structure. 07
- OR
- Q.3 (a) Discuss various schemes of retrofitting beams for different types of structural deficiency. 07
- (b) Explain in detail – Repair Materials for buildings 07
- Q.4 (a) Explain in detail the Local and the global deficiencies in buildings. 07
- (b) Differentiate (any two) 07
1. Porosity vs Permeability
 2. Abrasion vs Erosion
 3. Repair vs Rehabilitation
- OR
- Q.4 (a) What is meant by Jacketing? Discuss repair and strengthening of columns by jacketing. 07
- Q.4 (b) Define Non Destructive testing of Concrete. Explain any one NDT in detail 07
- Q.5 (a) Explain the crack repair by Routing and Sealing. 07
- (b) Explain durability of concrete along with the factors affecting the 07

durability of concrete.

OR

Q.5 (a) Write short notes on the following (any four)

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- 1) Alkali-Silica reaction
- 2) Mechanism of Micro-cracking due to differential thermal exposure.
- 3) Classification of Damage
- 4) Criteria for selecting the repair material.
- 5) Techniques of Demolition.
