

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER 2012****Subject code: 1721506****Date: 02-01-2013****Subject Name: Rehabilitation and Retrofitting of Buildings****Time: 10.30 am – 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.

- Q.1 (a)** Explain durability of concrete along with the factors affecting durability of concrete structures. **07**
- (b)** Explain the various causes of structural cracks in Reinforced Concrete Structures. How can you identify different types of cracks during on site investigation? **07**
- Q.2 (a)** Explain any two Non-Destructive tests carried out for the assessment of concrete strength in detail. **07**
- (b)** Explain strengthening of earthquake damaged building. **07**
- OR**
- (b)** What are the various signs of distress / deterioration in concrete structures? State the causes for the same. **07**
- Q.3 (a)** Explain “Conditional Assessment” of Structures in detail. **07**
- (b)** Classify the defects in the stone and brick masonry & discuss them in detail. **07**
- OR**
- Q.3 (a)** Enlist the various objectives of Conditional Survey & explain the Structural Inspection in detail. **07**
- (b)** What are the various sources of defects in brick masonry structures? Explain each source in detail. **07**
- Q.4 (a)** Discuss any one real structural failure in detail along with lessons learnt. **07**
- (b)** Discuss various schemes of retrofitting column for different types of structural deficiency. **07**
- OR**
- Q.4 (a)** Explain briefly the Structural & Non-structural cracks in buildings. Support your description with examples for each type. **07**
- Q.4 (b)** Discuss various schemes of retrofitting beam for different types of structural deficiency. **04**
- Q.5 (a)** Enlist various aspect to be taken care of while diagnosing the cracks **07**
- (b) Differentiate** (any three) **07**
- (i) Repair Vs Rehabilitation
- (ii) Strengthening Vs Retrofitting
- (iii) Porosity Vs Permeability
- (iv) Abrasion Vs Erosion
- OR**
- Q.5 (a)** Enlist repair materials available in the market for building maintenance. Discuss any one maintenance problem in detail. **07**
- (b)** Explain the role of quality control in construction as preventive measure against deterioration. **07**
