Seat No.: _____ Enrolment No._____

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) (i) Repair Vs Rehabilitation (ii) Strengthening Vs Retrofitting (iii) Porosity Vs Permeability (iv) Abrasion Vs Erosion	**07**
		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**

****