Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER III–EXAMINATION – WINTER 2015

Subject code: 2732004 **Date: 04/12/2015**

Subject Name: Rehabilitation and Retrofitting of Structures

Time: 2:30 PM to 5:00 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)**	List various construction and design deficiency which causes distress in the RCC structure.	**07**
	(b	Explain design principle, techniques and working mechanism of any two Nondestructive tests carried out for the assessment of concrete strength in detail.	**07**
Q.2	**(a)**	What do you understand by durability? What is the importance of durability in the design and construction of concrete structures?	**07**
	(b)	Write short note on 1) Alkali Silica reaction 2) Sulphate attack	**07**
		OR	
	(b)	Write short note on any two 1) Acid Attack 2) Effect of De- icing of salts	**07**
Q.3	**(a)**	Write short note on : Techniques applied for condition assessment of structure	**07**
	(b)	Explain the effect of following on RCC structures 1) Freezing and thawing 2) Sea water attack	**07**
		OR	
Q.3	**(a)**	Explain the effect of following on RCC structures 1) Carbonation 2) Abrasion , erosion and cavitation	**07**
	(b)	Explain how corrosion occurs in reinforcements in concrete.	**07**
Q.4	**(a)**	What are the parameters of selection of repair materials?	**07**
	(b)	What are the requirements for durability as per IS 456-2000.	**07**
		OR	
Q.4	**(a)**	Enlist repair materials available in the market for building maintenance. Discuss any one maintenance problem in detail.	**07**
	(b)	Explain the causes of Structural and Non Structural cracks in the buildings.	**07**

Q.5	**(a)**	Explain various schemes of retrofitting beam for different types of structural deficiency.	**07**
	(b)	Explain the various methodologies to repair an earthquake deficient masonry structure.	**07**

OR

Q.5	**(a)**	Explain various schemes of retrofitting column for different types of structural deficiency.	**07**
	(b)	Explain the role of quality control in construction as preventive measure against deterioration.	**07**

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