Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2013

	•	code: 1721506 Date: 02-01-2014	
Tiı	ne: 1	t Name: Rehabilitation & Retrofitting of Buildings  10.30 am – 01.00 pm  Total Marks: 70  etions:	
111,	1. 2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a) (b)	What is Durability & how come it's so important property of concrete? Explain various factors affecting Durability.  Explain the various causes of structural cracks in Reinforced Concrete Structures. How	07 07
	, ,	can you identify different types of cracks during on site investigation?	
Q.2	(a) (b)	Write short note on following (Any Two)  (i) Passivity of steel  (ii) Electrochemical Process  (iii) Permeability of Concrete  (iv) Electrical Resistivity of concrete  Explain in brief about Sulphate attack.	08
	(D)	OR	VV
	<b>(b)</b>	Explain in brief about Carbonation.	06
Q.3	(a)	What is Condition Survey? What are objectives of same & also explain in detail the	07
	<b>(b)</b>	various stages of the same.  Discuss any one real structural failure in detail along with lessons learnt.  OR	07
Q.3	(a)	Explain any 2 Non-Destructive tests carried out for the assessment of concrete strength in detail.	07
	<b>(b)</b>	What are the essential parameters for repair materials? Explain any three in details.	07
Q.4	(a)	Discuss various schemes of retrofitting of RCC column for different types of structural deficiency.	07
	<b>(b)</b>	What are the various sources of defects in brick masonry structures? Explain each source in detail.	07
Ο 4	(a)	OR Discuss various schemes of retrofitting of RCC beams for different types of structural	07
Q.4	(a) (b)	deficiency. Enlist repair materials available in the market for building maintenance. Discuss any one maintenance problem in detail.	07
Q.5	(a)	Define Seismic Strengthening. Explain building performance levels and Attributes for better performance of the structures.	07
	<b>(b)</b>	Explain in detail about Polymer Modified Mortar.	07
Q.5	(a)	What are the various signs of distress / deterioration in concrete structures? State the causes for the same.	07
	<b>(b)</b>	Explain in detail about Shotcrete.	07

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