Seat No.:	Enrolment No.
Deat 1 10	Emonition.

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. - SEMESTER – VIII EXAMINATION – OCTOBER 2012

Subject code: 180607 Date: 25/10/2012

Subject Name: Repairs and Rehabilitation of Structures

Time: 02.30pm - 05.00pm Total Marks: 70

Instructions:

- 1. Attempt any five questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Λ1	Angr	wer the following	14	
Q.1	(a)	Temperature at which sulfur is brought to molten state by heating it around ${}^{0}C$.	14	
	(b)	The Sulphur-infiltrated concrete has very low resistance to freezing and thawing.		
	(c)	Fibers which are used in fiber reinforced concrete can broadly be classified as and		
	(d)	Normal range of volume of PPF in concrete is to %		
	(e)	In general, vacuum suction is effective upto mm depth.		
	(f)	FRC improves a and b		
	(g)	Main cause of cracks during fresh stage of concrete is		
	(h)	is used for repairing live cracks.		
	(i)	The polymer modified mortar has very resistance to fire.		
	(j)	Corrosion of steel takes place due to (a) (b)changes.		
	(k)	In electrochemical mechanism of corrosion, electron moves throughand hydroxyl ions moves through		
	(l)	 (1) The brand name of PTFE is and is commonly used in coating utensils. m) In case of RCC, protection of steel against corrosion is commonly accounted by providing 		
	(m)			
	(n)	Epoxy have essentially two parts (a)(b)		
Q.2	(a)	Define durability of concrete and explain the major causes of inadequate durability.	07	
	(b)	Describe coefficient of permeability and coefficient of diffusion How do thy effect the mechanism of transportation of fluid through concrete. OR	07	
	(b)	What do you understand by corrosion? Explain mechanism by which steel corrodes in concrete.	07	
Q.3	(a)	What is meant by carbonation of concrete? How it is determined in concrete? What are the limitations associated with it?	07	
	(b)	What are the different means of chloride ingress in concrete? How does it affect the concrete properties?	07	

Q.3	(a)	Explain the structural defects and its causes in a masonry building. How can they be prevented?	07
	(b)	Explain the methodology to repair a earthquake deficient masonry structure.	07
Q.4	(a)	State the reasons of deterioration of reinforced concrete buildings. Explain preventive measures during concreting and during its usage.	07
	(b)	Differentiate between retrofitting and rehabilitation of structure. OR	07
Q.4	(a)	List the materials which can be used as laminate for an existing reinforced concrete beam. What are the preliminary requirements of laminate attachment?	07
	(b)	Explain complete process of concrete guiniting. In which conditions guiniting is preferred over jacketing?	
Q.5	Write	e a short note on (any three)	14
	(a)	Ferrocement	
	(b)	Fiber reinforced concrete	
	(c)	Vacuum concrete	
	(d)	Superplasticizer	
	(e)	Health monitoring techniques	
	(f)	Techniques applied for condition assessment of structures ***********************************	