

GLOBAL ACADEMY OF TECHNOLOGY
(Autonomous Institution, Affiliated to VTU)
SEE MODEL QUESTION PAPER
First Semester M.Tech. **STRUCTURAL ENGINEERING**
Repair and Rehabilitation of Structures 20MST151

Time: 3hrs

Max Marks: 100

Note: Answer any one full question from each module

Q. No's	Questions	Marks
Module 1		
Q.1.	a. Define Deterioration, Repair, Rehabilitation, Retrofit, Restoration of concrete structures.	05
	b. Explain the Rapid Visual Inspection in detail.	05
	c. Explain in detail the causes of deterioration of concrete structures.	10
OR		
Q.2.	a. Explain the stages of Conditional Assessment of RC Structures in detail.	10
	b. List and Explain any four Non Destructive Tests of RC structures.	10
Module 2		
Q.3.	a. List and Summarize the factors contributing to corrosion of RC structures.	10
	b. Explain the mechanism of Corrosion with chemical reactions.	05
	c. With neat sketches explain the possible design and constructional errors.	05
OR		
Q.4.	a. Discuss the effects of temperature and climate on concrete structures.	08
	b. Explain the different types of cracks found in concrete structures. Also list the remedial measures.	12
Module 3		
Q.5.	a. Define Maintenance of RC structures. Explain the Maintenance works in detail.	10
	b. With the flow chart summarize the assessment procedure for evaluating damaged structures.	10
OR		
Q.6.	a. List the causes that necessitate the maintenance of the structures.	05
	b. Explain different methods of repairs carried out on concrete structures.	05
	c. Summarize the different stages involved in repair and rehabilitation of concrete structures.	10
Module 4		
Q.7.	Explain in detail: i) Epoxy Injection ii) Guniting iii) Shoring iv) Underpinning	20

OR				
Q.8.	a. Explain the wet-mix process and dry mix process of concrete in detail with neat sketch.	12		
	b. Explain in detail: i) Foamed concrete ii) Vacuum concrete	08		
Module 5				
Q.9.	a. Define Marine exposure and its effects on concrete structures.	05		
	b. Explain in detail: i) Weathering corrosion in concrete structures ii) Salt weathering in concrete structures iii) Fire in concrete structures	15		
OR				
Q.10.	a. List the advantages and disadvantages of handheld machines used in demolition techniques.	05	CO4	L2
	b. Explain in detail: i) Stitching ii) Bonding iii) Bandaging	15	CO4	L2