



# CBCS SCHEME

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17CV753

## Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 Rehabilitation and Retrofitting of Structures

Time: 3 hrs.

Max. Marks: 100

**Note:** Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Discuss the common causes of deterioration of concrete. (10 Marks)  
b. Explain the mechanism of plastic shrinkage and drying shrinkage. List out the preventive measures. (10 Marks)

OR

- 2 a. Evaluate the common damages caused to concrete structures due to earthquake loads. (10 Marks)  
b. Explain the mechanism of Carbonation Attack and Sulphate Attack on concrete. List out the preventive measures. (10 Marks)

### Module-2

- 3 a. Explain the general procedure for investigation of damage. (10 Marks)  
b. Explain any two methods of Non – destructive testing. (10 Marks)

OR

- 4 a. Write a note on Evaluation of Cracks. (10 Marks)  
b. Explain the test procedure for any two methods of Semi – destructive testing. (10 Marks)

### Module-3

- 5 a. Discuss the causes of failure of structures due to construction errors. (10 Marks)  
b. Explain the process of Corrosion. (10 Marks)

OR

- 6 a. Discuss the effects of cover thickness and cracking on corrosion. (10 Marks)  
b. Explain the various corrosion protection techniques. (10 Marks)

### Module-4

- 7 a. Write a note on Seismic rehabilitation of existing structures. (10 Marks)  
b. Explain Column and Beam Jacketing techniques. (10 Marks)

OR

- 8 a. Define Maintenance. Enumerate the facts of maintenance and the importance of maintenance. (10 Marks)  
b. Explain : i) External Bonding [ERB] Technique  
ii) Near Surface Mounted [NSM] Technique. (10 Marks)

### Module-5

- 9 a. Discuss the different types of fibres and their role as a repair material. (10 Marks)  
b. Explain Cementitious and Polymer mortars as repair material. (10 Marks)

OR

- 10 a. Discuss the classification of repair materials and the selection criteria. (10 Marks)  
b. Explain the methods of repair by :  
i) Resin Injection ii) Stitching iii) Guniting and Shotcreting. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.