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## Eighth Semester B.E. Degree Examination, July/August 2022 Rehabilitation and Retrofitting

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain how Freeze and Thaw on concrete causes deterioration of concrete structures. (10 Marks)
- b. Explain the following terms :
- (i) Repair. (ii) Maintenance. (iii) Rehabilitation.
- (iv) Retrofitting. (v) Strengthening (10 Marks)

OR

- 2 a. Write short notes on Durability of concrete and Acid attack. (08 Marks)
- b. Explain the evaluation of structural damages to the concrete structural elements due to earthquake. (12 Marks)

### Module-2

- 3 a. Explain the step by step Damage Assessment Procedure. (08 Marks)
- b. What is destructive testing systems? Why load tests are usually carried? (04 Marks)
- c. Explain the penetration technique. (08 Marks)

OR

- 4 a. Write the objectives of rapid structured assessment. Explain the rapid assessment procedure. (12 Marks)
- b. List the common methods used in construction industry for semi-destructive testing systems. (08 Marks)

### Module-3

- 5 a. Explain the effects due to climate and temperature. (08 Marks)
- b. Explain the cathode protection. (06 Marks)
- c. What are the effects due to corrosion? Write the Anode and Cathode reactions. (06 Marks)

OR

- 6 a. Explain the corrosion Inhibitors. (08 Marks)
- b. Explain the design and construction errors of concrete structures. (12 Marks)

### Module-4

- 7 a. Discuss the importance of maintenance of structures. (08 Marks)
- b. Explain Beam Jacketing Technique, with sketches. (12 Marks)

OR

- 8 a. Explain externally bonding technique. (12 Marks)
- b. What is the process involved in near surface mounted technique. (08 Marks)

### Module-5

- 9 a. What is carbon fibre reinforced polymer? (06 Marks)
- b. Explain the types of special motors. (10 Marks)
- c. What are the properties of Epoxy resins? (04 Marks)

OR

- 10 a. What is Sisal Fibre and write its properties? (08 Marks)
- b. What is shoring and under Pinning? Explain its types. (12 Marks)

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