



CBCS SCHEME

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18CV824

Eighth Semester B.E. Degree Examination, June/July 2024 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 the following terms:
- Repair
 - Rehabilitation
 - Retrofitting
 - Strengthening
- (08 Marks)
- b. What are the physical causes for deterioration of concrete structures? Explain any two physical causes in detail. (12 Marks)

OR

- 2 a. Explain different evaluation methods of structural damage to the structural elements due to earthquake. (15 Marks)
- b. Explain in detail the deterioration of concrete structures due to sulphate attack. (05 Marks)

Module-2

- 3 a. What are the basic items covered in rapid damage assessment of distressed concrete structures? (10 Marks)
- b. Brief the damage assessment procedure with the help of flow chart. (10 Marks)

OR

- 4 a. Define NDT. List the destructive non destructive and semi-destructive testing systems on concrete structures. (10 Marks)
- b. Explain rebound hammer test and ultra pulse velocity test procedure used to assess the quality of concrete with a neat sketch. (10 Marks)

Module-3

- 5 a. Explain the influence of design and construction errors on durability of concrete. (10 Marks)
- b. Explain the effect of cover thickness and cracking on durability of concrete. (10 Marks)

OR

- 6 a. Explain the corrosion mechanism in reinforced concrete structures with the help of sketch. (10 Marks)
- b. Define corrosion inhibitors and explain different types of corrosion inhibitors. (10 Marks)

Module-4

- 7 a. Define maintenance. Explain the importance of maintenance of concrete structures. (08 Marks)
- b. Explain the causes which necessitate the maintenance, effects the service and durability of concrete structures. (12 Marks)

OR

- 8 a. Discuss :
- i) Necessity of jacketing
 - ii) Advantages of jacketing
 - iii) Types of jacketing
- b. Discuss ERB and NSM techniques.

(10 Marks)

(10 Marks)

Module-5

- 9 a. Explain the following: i) Epoxy injection ii) Repair mortars.
- b. Mention different types of special concretes. Explain polymer concrete and sulphur infiltrated concrete.

(10 Marks)

(10 Marks)

OR

10 Write short notes on:

- a. Rust eliminators
- b. Guniting and shotcrete
- c. Shoring and underpinning
- d. Fibre reinforced concrete.

(20 Marks)
