



Eighth Semester B.E. Degree Examination, Dec.2024/Jan.2025

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. Discuss the physical causes of deterioration of concrete structures. (10 Marks)
- b. Explain the following terms:
- Deterioration
 - Retrofitting
 - Strengthening
 - Rehabilitation
 - Repair
- (10 Marks)

OR

- 2 a. Explain the mechanism of Alkali reaction of concrete. List out the preventive measures. (16 Marks)
- b. Write short notes on salt attack on the concrete/salt weathering. (04 Marks)

Module-2

- 3 a. Brief the damage assessment procedure, with the help of flow chart. (10 Marks)
- b. What are the non-destructive test conducted to access the existing strength of concrete structure? Explain any one. (06 Marks)
- c. Write the general procedure for an investigation of damage. (04 Marks)

OR

- 4 a. Explain the test procedure for any two methods of semi-destructive testing. (10 Marks)
- b. Explain load test on structure with neat sketch. (10 Marks)

Module-3

- 5 a. Discuss the effect due to wear and erosion. (08 Marks)
- b. Discuss the effect due to temperature on concrete. (08 Marks)
- c. What are the different types of cracks? (04 Marks)

OR

- 6 a. List the design and construction errors. (08 Marks)
- b. Explain the process of corrosion protection technique. (12 Marks)

Module-4

- 7 a. Define Maintenance. Enumerate the facts of maintenance and importance of maintenance. (10 Marks)
- b. Explain the R.C.C Jacking system for beam and column with sketches. (10 Marks)

OR

- 8 a. Brief the Near Surface Mounted (NSM) technique in retrofitting structures. (10 Marks)
- b. Brief the external bonding technique. (10 Marks)

Module-5

- 9 a. Explain the different types of fibre reinforced polymers with advantages. (08 Marks)
- b. Write a note on special mortar. (07 Marks)
- c. Write a note on Rust eliminators. (05 Marks)

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OR

- 10 a. Briefly explain the vacuum concrete with a neat sketch. (10 Marks)
- b. Write a note on
- Define foam concrete and explain production of foam concrete and its types. (05 Marks)
 - Underpinning by cantilever needle beam method. (05 Marks)

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