18CV824

USN

Eighth Semester B.E. Degree Examination, June/July 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.   Define Repair, Rehabilitation, Retrofitting, Restoration and preservation of structures.
                                                                                                      (10 Marks)
    b.   Explain any five physical causes of deterioration of concrete structures.   **(10 Marks)**

OR

2   a.   Explain any five chemical causes of deterioration of concrete structures.   **(10 Marks)**
    b.   How to evaluate structural damages to the concrete structural elements due to earthquake?
                                                                                                      (10 Marks)

Module-2

3   a.   Elaborate CAPO test.   **(10 Marks)**
    b.   Discuss about principle and testing of rebound hammer test.   **(10 Marks)**

OR

4   a.   Elaborate half cell potential method of carrying out NDT.   **(10 Marks)**
    b.   Discuss the quality assurance in concrete structures.   **(10 Marks)**

Module-3

5   a.   Discuss design and construction errors.   **(10 Marks)**
    b.   Recommend in detail the different corrosion protection techniques.   **(10 Marks)**

OR

6   a.   Discuss corrosion mechanism.   **(10 Marks)**
    b.   Discuss the thermal properties of concrete.   **(10 Marks)**

Module-4

7   a.   List and explain the factors affecting maintenance.   **(10 Marks)**
    b.   Elaborate the restrengthening technique of slab.   **(10 Marks)**

OR

8   a.   Elaborate the restrengthening technique of beam.   **(10 Marks)**
    b.   Elaborate the guidelines for seismic rehabilitation of existing building.   **(10 Marks)**

Module-5

9   a.   Distinguish between natural and synthetic fibers.   **(10 Marks)**
    b.   Explain chemical admixtures.   **(10 Marks)**

OR

10 a.   Explain foamed concrete and vaccum concrete.   **(10 Marks)**
    b.   Discuss mortar repair for cracks, shoring and under pinning.   **(10 Marks)**

* * * * *