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10CT831

Eighth Semester B.E. Degree Examination, June/July 2019
Repair and Rehabilitation of Structures

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART – A

- 1 a. Explain the significance of assessment of structure, with a help of a flow chart. Explain the assessment procedure for evaluating the structure. (10 Marks)
- b. Describe the data to be recorded and collected regarding deteriorated structure in preliminary investigation. (10 Marks)
- 2 a. Define non-destructive test. Explain clearly the rebound hammer test and its limitations. (10 Marks)
- b. Explain the determination of depth of carbonation in concrete structures. What are the causes of carbonation on concrete structures? (10 Marks)
- 3 a. Define semi-destructive test. Explain the principle and working procedure of “WINDOR’s PROBE TEST”. (10 Marks)
- b. Explain the damage assessment parameters for repair and restoration of structures. (10 Marks)
- 4 Explain the restrengthening techniques for the beams and foundations. (20 Marks)

PART – B

- 5 a. List out the chemical, material and tools used for repair and restoration. (10 Marks)
- b. Explain the applications of fiber reinforced polymer composites for repair and strengthening of concrete structures. (10 Marks)
- 6 a. Define ductility and hence explain the ductility provisions for earthquake resistant RCC structures. (10 Marks)
- b. Explain briefly the foundation isolation and dampers. (10 Marks)
- 7 a. Explain in details, the inspections for evaluating a fire damaged structure. (10 Marks)
- b. Define retrofitting. Explain retrofitting techniques for reinforced concrete buildings. (10 Marks)
- 8 Write a short note on:
 - a. Ultrasonic pulse velocity test
 - b. Factors to be considered in selecting repair materials
 - c. Characteristics and uses of water proofing materials
 - d. Demolition of structures. (20 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.