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15CV753

## Seventh Semester B.E. Degree Examination, July/August 2021 Rehabilitation and Retrofitting of Structures

Time: 3 hrs.

Max. Marks: 80

**Note: Answer any FIVE full questions.**

- 1 a. Differentiate the terms Repair, Rehabilitation and Retrofitting. (08 Marks)  
b. Explain in brief physical process of deterioration of concrete. (08 Marks)
- 2 a. Explain in brief Chemical process of deterioration of concrete with respect to Sulphate Attack and Chloride Attack. (08 Marks)  
b. List out the undesirable behavior of concrete and its causes. (08 Marks)
- 3 a. Explain with flow chart the damage assessment of distressed structures. (08 Marks)  
b. Method of testing for concrete evaluation with respect to  
i) Mechanical properties (insitu) (08 Marks)  
ii) Physical condition. (08 Marks)
- 4 a. List out of key indicators at problems to be noted during visual inspection/Investigation. (08 Marks)  
b. Write a note : (08 Marks)  
i) Non-destructive testing systems  
ii) Semi-destructive testing systems.
- 5 a. Discuss the factors affecting durability of concrete structures. (08 Marks)  
b. What are the effect of 'moisture' and 'thermal' on concrete properties. (08 Marks)
- 6 a. Explain in brief mechanisms of corrosion and its influencing promoters. (08 Marks)  
b. Describe the different methods of protection of corrosion in concrete structures. (08 Marks)
- 7 a. List out the importance of maintenance and inspection. Explain in brief. (08 Marks)  
b. Explain in brief Anatomy of concrete surface repair. (08 Marks)
- 8 a. Explain with neat sketch beam – column moment capacity strengthening with various techniques. (08 Marks)  
b. Explain in brief beam and slab strengthening techniques. (08 Marks)
- 9 a. List out factors affecting compatibility of repair material with substrate and its selection criteria. (08 Marks)  
b. What are the advantages of Advanced composite material over conventional strengthening techniques? (08 Marks)
- 10 a. Explain in brief factors affecting the choice of special concretes and mortar. (08 Marks)  
b. Write a note on : (08 Marks)  
i) Epoxy Resin concrete  
ii) Polymer coatings.

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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.