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B.E / B.Tech (Part Time) DEGREE END SEMESTER EXAMINATIONS, April / May 2014

CIVIL ENGINEERING

VII Semester

PTCE504/PTCE9024 Maintenance and Rehabilitation of Structures

(Regulation 2005/2009)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. When do you call a structure as a distressed structure?
2. Tabulate the colour changes happen in concrete at different high temperatures.
3. List any four durability parameters of hardened concrete.
4. What is the main reason for crazing?
5. State any two expansive agents used in concrete.
6. State any two technical drawbacks of epoxy coatings to steel rebars.
7. What are the effects of excessive deflection in concrete members?
8. What is meant by weathering corrosion?
9. When do you recommend a structure for demolition?
10. Write short notes on soundless demolition of concrete.

Part – B (5 x 16 = 80 marks)

11. What are dilapidated structures? How do you demolish a distressed Highway Reinforced concrete bridge?
12. a) List the importance of maintenance. Explain the service life behavior of structures with respect to maintenance.
(OR)
b) Explain in detail about causes and effects of any four defects in concrete.
13. a) What are the checks you will make on the day of concreting to ensure quality?
(OR)
b) How do you experimentally determine the compressive strength and permeability of hardened concrete?
14. a) Explain in detail about any two corrosion protection methods in detail.
(OR)
b) What are the advantage and applications of Polymer concrete? With a flow chart explain the process of epoxy injection.
15. a) With neat sketches explain the method of improving strength of existing columns and beams
(OR)
b) How do you repair a RC structure distressed due to fire? Explain in detail.