

**W 2724**

M.E. DEGREE EXAMINATION, JANUARY 2007.

*Elective*

Structural Engineering

ST 1630 — MAINTENANCE AND REHABILITATION OF STRUCTURES

(Common to M.E. Construction Engineering and Management)

(Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by Permeable and Impermeable concrete?
2. Define the word "Crazing".
3. What are construction error in concrete structures?
4. How do cover thickness influence the serviceability of the structure?
5. Differentiate Repair and Rehabilitation.
6. What is the importance of maintenance?
7. Give the selection criteria for the repair materials.
8. What are exposure condition of structure as per codal provision?
9. Write short notes on Ferro cement.
10. What is meant by Shotcreting?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the strength and behaviour of concrete subjected to high temperature and also explain the effect of fire on the properties of concrete.

Or

- (b) Define Corrosion. What are the factors influencing corrosion of reinforcement? Explain the damages in RC structures due to corrosion of reinforcement.

12. (a) Explain assessment procedure for evaluation damages in a concrete structure and name the various testing system of concrete structures.

Or

- (b) Explain clearly with sketches the Surface Hardness Test and write its reliability and limitations.
13. (a) Explain Repair materials and methods for Rehabilitation of damaged Masonry structures.

Or

- (b) Explain with neat sketches, Retrofitting of damaged RC members by Fibre Reinforced Concrete.
14. (a) How do you repair various types of cracks? Explain.

Or

- (b) Explain the procedure of epoxy/polymer coating of rebars during rehabilitation work.
15. (a) Explain in detail the "Plate bonding and Fibre sheet bonding" strengthening technique.

Or

- (b) Explain any one demolition technique for Dilapidated structures.
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