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Question Paper Code: 52962

M.E. DEGREE EXAMINATION, MAY 2017

Elective

Structural Engineering

15PSE502 - FORENSIC ENGINEERING AND REHABILITATION OF STRUCTURES

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

- The statement of an organization's commitment to quality is
 - Policy
 - Vision
 - Mission
 - Principle
- The most effective method of removing old paint from structure
 - Washing with water
 - Scrubbing with gunny bags
 - Use of oxy-acetylene flame
 - Polishing with grinding stone
- Polyethylene terephthalate is called
 - Polyester
 - Polyester
 - Terylene
 - Saturated Polyester
- The coatings applied to concrete surface to concrete surface to arrest the carbonation process are known as
 - Carbonation coatings
 - Membrane coatings
 - Anti carbonation coatings
 - None of these
- One of the method adopted for protecting corrosion is
 - Painting
 - Distempering
 - Varnishing
 - Cleaning

PART B - (5 x 3 = 15 Marks)

- Define Quality assurance.

7. What are the causes of distress in structure?
8. Define polymer modifier.
9. Write the corrective measures for cracks.
10. How can you develop a demolition strategy?

PART C - (5 x 16 = 80 Marks)

11. (a) Discuss about the design and construction errors leading to deterioration of a structure. (16)

Or

- (b) Explain the mechanism of cathodic protection and also, define corrosion inhibitors and corrosion. (16)

12. (a) Explain in detail about the facts of maintenance and importance of maintenance. (16)

Or

- (b) Explain the technique of adding external reinforcement for strengthening. Explain the importance of strengthening in buildings. (16)

13. (a) Discuss the process technology of polymer composites. (16)

Or

- (b) Write about the role of epoxies and latexes as repair materials. (16)

14. (a) Explain with neat sketches about the fibre sheet bonding strengthening technique. (16)

Or

- (b) Explain grouting and dry packing concrete techniques. (16)

15. (a) Explain the methods used for fire protection in RC buildings. Discuss the sea water attack on concrete. (16)

Or

- (b) Discuss the various rehabilitation measures to be adopted to overcome the distress due to excessive deflection and cracking of structures. (16)