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Question Paper Code: 42692

M.E. DEGREE EXAMINATION, NOV 2016

Elective

Structural Engineering

14PSE502 – MAINTENANCE AND REHABILITATION OF STRUCTURES

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (5 x 1 = 5 Marks)

1. The process of restoring something that is damaged or deteriorated or broken condition called as
(a) Repair (b) Maintenance (c) Rehabilitation (d) All the above
2. A maintenance done after the defects or damage is called
3. The purpose of providing DPC in building is.
(a) to prevent the entry of moisture (b) to allow the entry of moisture
(c) to give asthetic appearance (d) none of the above
4. To protect reinforcement from corrosion in moderate exposure condition the main cover should be _____
(a) 80 mm (b) 60 mm (c) 30 mm (d) 25 mm
5. The technique applied to the building of new work underneath an existing structure without disturbing its stability is
(a) Shoring (b) Underpinning (c) Repair (d) Guniting

PART - B (5 x 3 = 15 Marks)

6. Define distress.

7. Differentiate between Thermal cracks and Shrinkage cracks.
8. What are the sources of dampness?
9. List the agencies causing deterioration in steel structures and its preventive measures.
10. What is jacketing?

PART - C (5 x 16 = 80 Marks)

11. (a) As a site engineer, what are the factors you would check during the day of concreting to assure quality in construction? Explain in detail. (16)

Or

- (b) How quality assurance plays an important role in construction industry? Explain the parameters affecting the quality of concrete construction. (16)

12. (a) What are the various causes for building crack? How will you diagnose the building cracks? Give the remedial measures. (16)

Or

- (b) Explain briefly the cracks developed in the structures due to construction overloads, externally applied loads and design errors. (16)

13. (a) A Masonry building which was damaged due to moisture movement from the ground. Give the diagnosis of causes and measures to retrofit the structures. (16)

Or

- (b) Write a explained note on ferro cement overlay. (16)

14. (a) An existing reinforced concrete beam has lost its flexural strength due to excessive corrosion of reinforcement. How will you increase its strength? Explain. (16)

Or

- (b) Explain the various causes of deterioration and remedial measures of steel structures. (16)

15. (a) How will you strengthen the super structure? Explain. (16)

Or

- (b) Explain with neat sketches about the jacketing techniques for the repair of seismically affected beam - column joint in the building. (16)