Reg. No. : | | | | | | | | | | |

Question Paper Code: 92061

M.E. DEGREE EXAMINATION, OCTOBER 2014.

First Semester

Structural Engineering

01PSE502 – MAINTENANCE AND REHABILITATION OF STRUCTURES

(Regulation 2013)

(Use of Mix design tables & charts are permitted)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Mention the significance of rehabilitation of a structure.
2. List down any four economical repair methods available in the market.
3. What is mean by permeability?
4. How strength property influences the durability of concrete?
5. Quote any four concrete chemicals.
6. Define shoring.
7. What is mean by retrofitting?
8. Give the significance of FRP.
9. State any two applications of demolition.
10. The demolition of a building is a boon to the society. Justify?

PART - B (5 x 14 = 70 Marks)

11. (a) Describe the assessment procedure for evaluating a damaged structure. (14)

Or

(b) (i) Explain the maintenance of structures. (9)

(ii) List the various causes of deterioration. (5)

12. (a) Describe about the quality assurance for concrete construction. (14)

Or

(b) (i) List the effects of cover thickness and cracking. (7)

(ii) Write short note on "corrosion effects on concrete". (7)

13. (a) (i) Brief about shorting. (7)

(ii) Explain about corrosion inhibitors and corrosion resistant steels. (7)

Or

(b) Discuss about the underpinning in detail with its practical applications and suitable case study. (14)

14. (a) Describe about the procedure involved in repair of structures distressed due to earthquake. (14)

Or

(b) Write short note on the following:

(i) Strengthening using steel plates. (8)

(ii) Stabilization techniques for repair. (6)

15. (a) Explain about the various demolition techniques available in detail. (14)

Or

(b) Discuss with a suitable case study about the demolition of a building, its merits and demerits. (14)

PART - C (1 x 10 = 10 Marks)

16. (a) Give the practical applications of the following:

(i) Vacuum concrete. (5)

(ii) Gunite and shotcrete. (5)

Or

(b) (i) Discuss about construction errors in detail. (5)

(ii) Give the positive aspects of epoxy injection. (5)

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