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Question Paper Code: 92061

M.E. DEGREE EXAMINATION, MAY 2014.

Elective

Structural Engineering

01PSE502 - MAINTENANCE AND REHABILITATION OF STRUCTURES

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the causes of deterioration?
2. What is preventive maintenance?
3. What are the types of cracks?
4. What are the factors affecting chemical attack on concrete?
5. What is meant by ferro cement?
6. What is a dry pack?
7. Define retrofitting?
8. List some materials used as protective surface coatings.
9. What are the major factors in selecting a demolition procedure?
10. What do you mean by underpinning?

PART - B (5 x 14 = 70 Marks)

11. (a) Explain the various facets of maintenance .Explain briefly the various causes of deterioration of concrete. (14)

Or

- (b) With a flow chart, explain the procedure for assessing the damages of distressed structure. (14)
12. (a) How quality assurance play an important role in construction industry? Explain the parameters affecting the quality of concrete construction (14)
- Or
- (b) With neat sketches, explain the possible design and constructional errors. (14)
13. (a) Write short note on
- (i) Polymer concrete. (5)
 - (ii) Guniting and shotcrete. (5)
 - (iii) Expansion cement. (4)
- Or
- (b) Explain the behaviour of steel fibre reinforced concrete as repair material. Tabulate the different types of fibres used in concrete with its advantages. (14)
14. (a) Explain the different methods of strengthening the concrete structures against earthquake. (14)
- Or
- (b) Explain the methods of improving the strength of existing columns and beams with neat sketch. (14)
15. (a) Explain in detail about the various types of demolition techniques. (14)
- Or
- (b) Explain in detail about the various factors to be considered while demolishing high rise buildings. (14)
- PART - C (1 x 10 = 10 Marks)**
16. (a) Explain the methods used for fire protection of RC buildings. (10)
- Or
- (b) Give the procedure of epoxy injection to structural crack repair in RC structural elements. Explain the procedure of epoxy coating of rebar. (10)
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