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Question Paper Code: 12065

M.E. DEGREE EXAMINATION, APRIL 2015.

First Semester

Structural Engineering

01PSE104 - ADVANCED CONCRETE TECHNOLOGY

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

(Use of mix design tables & charts are permitted)

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. List the methods of combining aggregates.
2. List out the various classification of admixtures.
3. Define the elastic property of concrete.
4. Mention the factors affecting durability of concrete.
5. Enumerate the parameters of quality control.
6. List out the effect of water cement ratio on strength of concrete.
7. What is meant by hyper plasticized concrete?
8. List the applications of polyester resins.
9. Define extreme weather concreting.
10. What is meant by vacuum dewatering?

PART - B (5 x 14 = 70 Marks)

11. (a) (i) Describe briefly about any two tests to be conducted on aggregates (7)
(ii) Explain about role of admixtures in concrete (7)

Or

- (b) (i) Discuss about the types cements available with their specific uses. (7)
(ii) Brief about various tests to be conducted to evaluate the quality of fine aggregate. (7)
12. (a) (i) What are the factors affecting workability of concrete ? (7)
(ii) Explain the procedure of compacting factors test with neat sketches (7)

Or

- (b) Discuss about the factors affecting creep and shrinkage of concrete (14)
13. (a) (i) What are the factors to be considered in a concrete mix design (7)
(ii) Explain the step by step procedure of concrete mix design as per Indian standards (7)

Or

- (b) Explain about the sampling and acceptance criteria of concrete (14)
14. (a) Write short notes on:
(1) Sulphur impregnated concrete. (4)
(2) Fibre reinforced concrete (4)
(3) Light weight concrete. (3)
(4) Self curing concrete. (3)

Or

- (b) Explain about the characteristics and testing techniques for self compacting concrete. (14)
15. (a) What are the objectives of curing of concrete? Briefly explain the different methods of curing of concrete (14)

Or

- (b) Explain the procedure of vacuum dewatered concrete with practical difficulties? (14)

PART - C (1 x 10 = 10 Marks)

16. (a) Explain briefly the special formwork for non conventional elements? (10)

Or

- (b) What do you understand by high performance concrete? Explain the classification of high performance concrete based on characteristic strength and durability (10)
