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**Question Paper Code : 11163**

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Elective

Construction Engineering and Management

CN 9251/CN 951/UCN 9151/10211 SEE 11 — ADVANCED CONCRETE  
TECHNOLOGY

(Common to M.E. Structural Engineering)

(Regulation 2009/2010)

Time : Three hours

Maximum : 100 marks

(Necessary codes and tables are permitted)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by soundness of aggregate?
2. What is meant by retarder?
3. What is creep in concrete?
4. How will you determine the strength of concrete?
5. Define 'Mix Design'.
6. Define 'Coefficient of variation'.
7. Name some polymers used in concrete.
8. Super plasticizer is improving the strength of concrete. Justify.
9. What is high performance concrete?
10. Distinguish between vacuum concrete and vacuum dewatered concrete.

PART B — (5 × 16 = 80 marks)

11. (a) Explain how admixtures are improving strength and other properties of concrete. (16)

Or

- (b) Explain the phenomenon, causes and effects of efflorescence in concrete. (16)

12. (a) Discuss the applicability of the various workability tests to concretes of different levels of workability.

Or

- (b) Sketch the failure patterns for concrete specimens subjected to uniaxial tension, uniaxial compression and biaxial compression assuming no end restraint.

13. (a) Explain the steps involved in the IS code method of designing concrete mixes.

Or

- (b) Explain the method of controlling the quality of concrete in field.

14. (a) Discuss in detail the factors affecting the properties of fibre reinforced concrete. (16)

Or

- (b) What are the applications of polymer impregnated concrete? (16)

15. (a) Discuss about the vacuum dewatered concrete.

Or

- (b) (i) Write a note on special form work. (8)

- (ii) What are the problems encountered in under water construction? Discuss. (8)