

B. Tech Degree III Semester Examination, December 2006

CE 304 CONCRETE TECHNOLOGY (1999 Admissions onwards)

Time : 3 Hours

Maximum Marks : 100

(All questions carry **EQUAL** marks)

- I. (a) What is meant by ordinary Portland cement 53 grade? What are the chemical composition of Portland cement?
(b) Write a brief procedure on how to determine the initial setting time of cement.
- OR**
- II. (a) How is the compressive strength of cement determined?
(b) What are the applications of soundness test on cement? Explain the procedure of soundness test.
- III. (a) What are tests used to find out the shape of the aggregates?
(b) How does bulking of sand affect the proportioning of aggregate in concrete?
- OR**
- IV. (a) Explain the procedure for determination of 'ten percent fines value'.
(b) Write a short note on the feasibility of use of sea water for mixing concrete.
- V. (a) Define admixture. Name *any five* admixtures and write their uses.
(b) What is air entrained concrete? What are the air entraining agents? What are factors affecting the amount of air entrainment?
- OR**
- VI. (a) What is workability of concrete? What are factors affecting workability?
(b) What are the methods available for measuring air content of fresh concrete? Explain one of the methods in detail.
- VII. (a) Briefly discuss various methods of concrete mix design.
(b) What are the precautions to be taken while transporting concrete? What are the advantages of concrete pump?
- OR**
- VIII. Write short notes on *any four* :
- (i) Non destructive test on concrete
 - (ii) No fines concrete
 - (iii) Grouting agents
 - (iv) Corrosion inhibiting agents
 - (v) Miscellaneous admixtures.
- IX. Write short notes on *any four* :
- (i) Light weight concrete
 - (ii) Polymer concrete
 - (iii) Sulphur infiltrated concrete
 - (iv) Fibre reinforced concrete
 - (v) High density concrete.

