

**B.Tech. Degree III Semester Examination  
January 2002**

**CE 304 CONCRETE TECHNOLOGY**

Time: 3 Hours

Maximum Marks: 100

(All questions carry EQUAL marks)

- I. (a) How does cement set? What are the functions of four principle cement compounds?  
(b) What are the Indian Standard Tests to be conducted on Ordinary Portland Cement?  
What is the importance of setting times? How it is determined in the laboratory?  
**OR**
- II. (a) Write the properties of following cements:  
(i) Portland puzzolana cement  
(ii) Low heat cement  
(iii) Super sulphate cement  
(b) Briefly explain the air permeability test with neat sketches of the apparatus.
- III. (a) Write briefly about the classification of aggregates according to size, shape and texture.  
(b) What is meant by 'grading of aggregates'? How the 'fineness modulus' of a given sample of aggregates is determined?  
**OR**
- IV. (a) What is 'soundness' of aggregates? How it is determined?  
(b) Explain how the 'impact value' of aggregates is determined.
- V. (a) Define 'workability' of concrete. List the methods for measuring workability of concrete and explain any one method in detail.  
(b) What is meant by 'curing of concrete'? What are its purposes? How it is done?  
**OR**
- VI. (a) What is 'durability of concrete'? What are the factors affecting durability?  
(b) Briefly describe 'Non-destructive testing methods' of concrete.
- VII. (a) What are the variable factors specifying a concrete mix?  
(b) Explain briefly the ACI method of designing concrete mixes.  
**OR**
- VIII. Write short notes on any four:
- (i) Ready mixed concrete
  - (ii) High density concrete
  - (iii) Fibre reinforced concrete
  - (iv) Polymer concrete
  - (v) Light weight concrete
- IX. Write short notes on any four of the following:
- (i) Pozzolanic admixtures
  - (ii) Air detaining agents
  - (iii) Water reducing admixtures
  - (iv) Workability agents
  - (v) Bonding admixtures
  - (vi) Colouring agents

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