Code No. BTS 118 (C)

B.TECH. DEGREE III SEMESTER (SUPPLEMENTARY) EXAMINATION IN
CIVIL ENGINEERING (HABITAT ENGINEERING AND CONSTRUCTION
MANAGEMENT) JUNE 2001

CE 304 CONCRETE TECHNOLOGY
(1995 & 1998 Admissions)

Time: 3 Hours   Maximum Marks: 100

I.   (a)   Briefly explain the chemical composition of ordinary Portland cement.   (8)
       (b)   What is meant by soundness of cement?
             Write a brief procedure for determining soundness.   (12)

                                        OR

II   Write short notes on the following:
             (i)   Quick setting cement
             (ii)   Rapid hardening cement
             (iii) Hydrophobic cement
             (iv)   Masonry cement   (20)

III.   (a)   Explain the terms specific surface and surface index of aggregates with
             their effects on workability of concrete.   (10)
       (b)   How flakiness index of aggregate can be determined? (According to IS
             specifications).   (10)

                                        OR

IV.   (a)   What are grading curves in Seive analysis?   (8)
       (b)   Explain the terms:
             (i)   Ten percent fines value and
             (ii)   Fineness modulus of aggregates.   (12)

V.   (a)   Define the term 'admixture'. List any six admixtures used in concrete
             construction.   (10)
       (b)   What are retaders used in concrete? List the merits and demerits of using
             retarders.   (10)

                                        OR

VI.   (a)   What are the effect of air-entrainment on properties of concrete?   (10)
       (b)   Explain the situation where damp-proofing and permeability reducing
             agents are used in concrete.   (10)

VII.   (a)   Explain the importance of curing.   (8)
       (b)   When curing should be started and how long it should be continued?   (6)
       (c)   List any four methods of curing.   (6)

                                        OR

VIII.   Compare different tests used to determine the workability of concrete with
             regard to its suitability and sensitivity to different mixes.   (20)

IX.   Explain the significance of statistical quality control in concrete mix design.   (20)

                                        OR

X.   Explain the procedure of mix design by ACI method.   (20)

                                        ***