

Code: CE4T1

II B.Tech - II Semester – Regular Examinations - JUNE 2014

**CONCRETE TECHNOLOGY
(CIVIL ENGINEERING)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Define hydration of cement. Explain sulphate resisting cement and accelerator admixtures. 7 M
- b) Explain the test conducted to find setting time and compressive strength of cement. 7 M
2. a) What are the common deleterious materials which may be found in aggregate? How does the shape of aggregate particle affect the properties of fresh concrete? 7 M
- b) Write down the significance of Crushing value, Impact Value and Abrasion value of aggregate? 7 M
3. a) Explain the effect of time and temperature on workability. Explain in brief segregation and bleeding. 7 M
- b) List out the methods for measuring workability of concrete and explain any one method in detail. 7 M

4. a) Define the gel/space ratio. What is the effective water/cement ratio? 7 M
- b) Sketch the failure patterns for concrete specimens subjected to uniaxial tension, uniaxial compression and biaxial compression, assuming no end restraint. 7 M
5. a) How do you determine the splitting strength of concrete? 7 M
- b) Briefly describe the 'Non-destructive testing methods'. 7 M
6. a) Define creep of concrete. Discuss the main factors affecting the shrinkage of concrete. 7 M
- b) Explain the following terms: Modulus of elasticity of concrete, drying shrinkage and effect of creep. 7 M
7. a) Explain step by step procedure of concrete mix design using IS method. 7 M
- b) What are the main factors in designing concrete for durability? How do you allow for the moisture content of aggregate in calculating the batch quantities? 7 M

8. a) What is the difference between light weight concrete and light weight aggregate concrete? 7 M
- b) Discuss the no-fines concrete and its uses. 7M