

Code: CE4T1

II B.Tech - II Semester – Regular Examinations - JUNE 2015

**CONCRETE TECHNOLOGY
(CIVIL ENGINEERING)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Describe the hydration reaction of important Bogue compounds indicating the products of hydration. 7 M
b) List the various types of chemical and mineral admixtures and their usage in the development of concrete. 7 M
2. a) What are the effects of shape, texture and maximum size of aggregates on the strength and workability of concrete? 7 M
b) Explain the various tests conducted on coarse aggregate indicating the property being tested. 7 M
3. a) What are the various factors which affect the workability of concrete? Explain. 7 M
b) Explain the various test methods for measuring the properties of fresh concrete. 7 M
4. a) Discuss maturity of concrete and how to measure it. 7 M

- b) How the water – cement ratio and gel – space ratio will affect the strength of concrete. 7 M
5. a) List the various non destructive testing methods and explain in detail of any TWO methods. 7 M
- b) What are the important factors affecting the compressive strength of concrete. 7 M
6. a) What are the factors that affect the shrinkage and creep of concrete? 7 M
- b) Draw the typical stress – strain curve for concrete. Explain how to determine the various elastic moduli for concrete? 7 M
7. a) Define the durability of concrete and what are the reasons for the durability problems in concrete. 7 M
- b) Explain how will you account for the moisture present in sand while mix proportioning. 7 M
8. a) What are the typical ranges of aggregate unit weight for making structural light weight concrete? 7 M
- b) Explain the mechanism for achieving the Self Compacting Concrete and advantages of SCC. 7 M