III Sem B.E. CIVIL (New Course)

SUMMER 2015

CONCRETE TECHNOLOGY

1. (a) Explain Bogue's compound and significance of each on property of cement. (6)

   (b) Explain Alkali-Aggregate reaction. How can it be controlled ? (7)

OR

2. (a) Explain in brief soundness test on cement. (6)

   (b) Explain bulking of sand and its significance. (7)

3. (a) What is workability ? List out the tests for workability measurement. Compare volume batching and weight batching. (8)

   (b) What are the various causes of bleeding and segregation in concrete ? (6)

OR

4. (a) Describe the various methods of curing. Explain maturity of concrete. (8)

   (b) Explain Hot-Weather concreting. (6)

5. Write short notes on (any three) :

   (i) Flexural strength test on concrete

   (ii) Poisson's ratio of concrete

   (iii) Factors affecting compressive strength

   (iv) Accelerated curing test. (13)

OR

6. (a) Compare compression test by cube strength and cylinder strength. Explain split cylinder test. (8)

   (b) Explain bond between concrete and reinforcement. (5)

7. (a) What is the objective of mix design ? Explain the statistical parameters used in quality control of concrete. (7)

(b) What do you mean by air-entrained concrete ? (6)

OR

8. (a) Explain in detail Indian standard recommended method of concrete mix design. (7)

(b) Explain following, admixtures, giving examples of each :

(i) Accelerators

(ii) Super Plasticizers

(iii) Water reducers. (6)

9. (a) Explain the factors affecting creep and shrinkage of concrete. (7)

(b) Explain fibre reinforced and polymer concrete. (7)

OR

10. Explain :

(i) Differential shrinkage (4)

(ii) Relation between creep and time (5)

(iii) Self compacting concrete. (5)

11. (a) Explain various causes of cracks. (6)

(b) Explain permeability of concrete. How does water cement ratio affect permeability ? (7)

OR

12. (a) Define durability of concrete. Explain various factors affecting durability of concrete. (7)

(b) Explain water as an agent of deterioration of concrete. (6)