Third Semester B. E. (Civil) (C.B.S.) Examination

CONCRETE TECHNOLOGY

Time : Three Hours]   [Max. Marks : 80

N. B. : (1) All questions carry marks as indicated.
        (2) Due credit will be given to neatness and adequate dimensions.
        (3) Assume suitable Data wherever necessary.
        (4) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) Give the oxide composition of cement and state the effect on the properties of cement.   7

   (b) Explain the field tests on cement.   6

OR

2. (a) Explain in brief about the soundness test on cement.   7

   (b) Explain in detail the impact test on aggregate.   6

3. (a) Define workability. Enlist various test to measure workability. Explain compaction factor test in detail.   7

   (b) What is batching ? Compare Volume Batching and Weight Batching.   6

OR

4. (a) What are various causes of bleeding and segregation in concrete ? 6

 (b) Why curing is necessary ? Explain various methods of curing. 7

5. (a) Enlist various tests for determination of tensile strength of concrete. Elaborate centre point loading method. 7

 (b) Explain effect of water cement ratio on strength of concrete. 6

OR

6. Write short notes on :—

 (i) Accelerated curing test.

 (ii) Modulus of elasticity.

 (iii) Comparison between cube and cylinder strength. 13

7. (a) What are statistical parameters used in quality control of concrete ? 6

 (b) Explain in detail concrete mix Design by IS : 10262 : 2009. 7

OR

8. (a) What are admixtures ? Explain air entrained concrete. 6

(b) Explain various admixtures used to improve workability of concrete. 7

9. (a) Explain in detail shrinkage of concrete. 7

   (b) Define creep. Explain various factors affecting creep. 7

OR

10. Write short notes on :—
    (i) Ferrocement.
    (ii) Shotcrete.
    (iii) Self compacting concrete. 14

11. (a) Explain ultra sonic pulse velocity test on concrete. 7

    (b) Explain various causes of cracks in concrete. 7

OR

12. Write short notes on :—
    (i) Water as agent of deterioration.
    (ii) Permeability of concrete.
    (iii) Repairs of cracks. 14