

B.E. (Civil Engineering) Third Semester (C.B.S.)
Concrete Technology

P. Pages : 2

Time : Three Hours



NRJ/KW/17/4351

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data whenever necessary.
 10. Diagrams and chemical equations should be given whenever necessary.
 11. Illustrate your answers whenever necessary with the help of neat sketches.
 12. Use of non programmable calculator is permitted.

1. a) List different types of cements. Explain any two type in detail. 7
b) What are the field tests for judging the preliminary quality of cement ? 7

OR

2. a) What are the various Aggregates used in cement concrete work ? Explain about the surface texture of Aggregates. 7
b) Explain the test on specific gravity, bulk density & moisture content of aggregate. 7
3. a) What is workability and what are the factors affecting it ? 7
b) Explain under water concreting by the use of Tremie Pipe method. 6

OR

4. a) Write a short note on hot weather concreting and underwater concreting. 7
b) What is mean by maturity of concrete ? 6
5. a) Explain the various properties which affect the quality of concrete. 5
b) Explain Modulus of elasticity of concrete. 4
c) Explain Poison's ratio of concrete. 4

OR

6. a) Explain the effect of h/d ratio on the strength of concrete. 5

- b) Short note on indirect tension test. 4
- c) How abrasion and erosion affects the concrete ? 4
7. a) Explain mix design process ? What are the factors affecting mix properties ? Also explain aggregate cement ratio. 7
- b) Write the step by step procedure adopted for the method of mix design as per IS. 7

OR

8. a) Explain the four variable factors to be consider in connection with specifying a concrete mix. 7
- b) Write a short note on Air entraining admixtures plasticizers and super plasticizers. 7
9. a) Explain in brief self - compacting concrete and high performance concrete. 7
- b) Different types of shrinkage and factors affecting shrinkage. 6

OR

10. Explain : 13
- i) Differential Shrinkage.
- ii) Relation between creep & time.
- iii) Shortcrete pumped concrete.
11. a) Explain water as an agent of deterioration of concrete. 6
- b) What are types of cracks in concrete? Explain various causes of cracks in concrete. 7

OR

12. Explain in brief the following non-destructive testing of concrete. 13
- i) Rebound Hammer method.
- ii) Ultrasonic pulse velocity testing method.
