

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

P. Pages : 2

Time : Three Hours



**NRT/KS/19/3296**

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. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) List important physical tests of cement ? Explain any two in brief. **8**  
b) Explain in brief "Sulphate Resisting Portland Cement". **6**

**OR**

2. a) Explain field test on cement ? Also explain soundness test on cement. **7**  
b) Explain the test on specific gravity, Bulk density & moisture content of aggregate. **7**
3. a) Explain various factors affecting workability of concrete. **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) Explain significance of water cement ratio. What is segregation and bleeding in 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 Poisson's ratio of concrete. **4**

**OR**

6. a) Explain the following :  
i) Effect of height / diameter ratio on strength. **4**  
ii) Compression Test **4**

- b) Write the procedure & advantages of indirect Tension Test Methods. **5**
7. a) Explain concrete mix design procedure as per IS : 10262:2009. **7**
- b) What are the significance of fly-ash & pozollonas in view of quality of concrete ? **6**

**OR**

8. a) Explain concrete mix design by Road Note No. 4 (BS) **7**
- b) Write a short note on Air entraining admixtures plasticizers and super-plasticizers. **6**
9. a) What is high performance concrete. Also explain its procedure. Why this concrete is used in the field. **7**
- b) Write short notes on : **6**
- i) Self compacting concrete.
- ii) High performance concrete.

**OR**

10. Explain : **4**
- i) Differential Shrinkage. **4**
- ii) Relation between creep & time. **5**
- iii) Shortcrete pumped concrete. **4**
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. **8**

**OR**

12. Explain in brief the following Non-Destructive testing of concrete. **14**
- i) Rebound Hammer method.
- ii) Ultrasonic pulse velocity testing method.

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