

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

P. Pages : 2

Time : Three Hours



**TKN/KS/16/7299**

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Illustrate your answers whenever necessary with the help of neat sketches.
  4. Use of non programmable calculator is permitted.

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) What are the various Aggregates used in cement concrete work? Explain about the surface Texture of Aggregates. **7**
- b) Explain in brief the Grading of coarse Aggregate and fine 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) Explain the various stages of manufacture of concrete. **7**
- b) Explain in brief the maturity of concrete. **6**
5. a) Explain the various properties which affect the quality of concrete. **7**
- b) Write a detailed note on water cement ratio and bond strength between cement & steel reinforcement. **7**
- 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. **6**
7. a) Explain the four variable factors to be consider in connection with specifying a concrete mix. **6**
- b) Explain I. S. method of concrete Mix Design. **7**

**OR**

8. a) List various types of Admixtures used in concrete ? Explain plasticizers and super-plasticizers. **7**
- b) Explain the effect of Fly Ash on Fresh concrete & Hardened concrete. **6**
9. a) Define Shrinkage ? Explain in brief various classification of shrinkage. **7**
- b) Define creep? Explain various factors affecting creep. **6**

**OR**

10. a) Write a short note on: **8**
- i) Self compacting concrete.
- ii) Fiber Reinforced & Polymer concrete.
- b) Explain shotcrete pumped concrete. **5**
11. a) Write a note on Distress in concrete structures and it's causes. **7**
- b) Explain the material and methods of Repairs of cracks in concrete. **6**

**OR**

12. Explain in brief the following Non-Destructive testing of concrete. **13**
- i) Rebound Hammer method.
- ii) Ultrasonic Pulse velocity testing method.

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