

**Concrete Technology**

P. Pages : 2

Time : Three Hours



**NJR/KS/18/4351**

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. Illustrate your answers whenever necessary with the help of neat sketches.
  11. Use of non programmable calculator is permitted.

1. a) Give the oxide composition of cement & state the effect of each on the properties of cement. **7**  
b) Give the classification of aggregate according to their source, shape & size. **6**

**OR**

2. a) Explain how the fineness of cement affects the strength of cement. **7**  
b) Describe in details the ways to control Alkali aggregate reaction. **6**
3. a) What do you mean by Workability of concrete? Is it necessary to determine the workability of concrete. Explain. **7**  
b) What is curing of concrete? How do you decide the period of curing. Explain. **6**

**OR**

4. a) Explain in Brief segregation, Bleeding & Water Cement ratio. **7**  
b) What is concrete? Explain in detail the manufacturing Process of Concrete. **6**
5. a) What are the factors which affect the strength of concrete? Explain one of them in brief. **7**  
b) What do you mean by M5, M10, M15, M20, M25 concrete? Give its proper ratio. Is concrete is necessary. Explain why? **7**

**OR**

6. a) Write briefly regarding the flexural strength of concrete. **7**  
b) Write short notes on: **7**  
i) Split Cylinder Test ii) Tensile Strength

7. a) Explain concrete mix design procedure as per IS:10262. 7  
b) What are the significance of fly-ash & pozollonas in view of quality of concrete? 6

**OR**

8. a) What are the objective of concrete mix design? Draw a flow chart for concrete mix design. Why mix design is reg<sup>r</sup>? 7  
b) Types of admixtures and factors affecting admixture (any two). 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. a) What do you mean by creep in harden concrete? Describe the relation between creep & age of concrete. 7  
b) What is ferrocement? Why it is required? What are its applications? 6
11. a) Describe ultra sonic pulse velocity test. its suitability & its significance. 7  
b) What are the causes of deterioration of concrete? Enlist the point which affect the durability of concrete. 7

**OR**

12. a) What are the different types of cracks. Occur in concrete also Explain its causes? Explain the procedure of repairs. 7  
b) Write short notes on: 7  
i) Permeability of concrete ii) Sulphate Attack

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