

Faculty of Engineering & Technology
Third Semester B.E. (Civil Engg.) (C.B.S.)
Examination
CONCRETE TECHNOLOGY

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (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.
 - (5) Use of Non programmable calculator is permitted.
1. (a) What are Bogue's Compounds ? Explain the significance of each on the properties of cement. 7
- (b) Enlist various physical properties of coarse aggregate and discuss effect of each on strength of concrete. 7

OR

2. (a) What is grading of aggregates ? Describe the procedure to find the Fineness Modulus of the aggregates. 7

- (b) What is Portland Cement ? Enlist various types of cement with their relative advantages and disadvantages. 7
3. (a) Define Workability. Enlist the various tests to measure the workability of Concrete. Explain any one test on workability. 7
- (b) Explain Abrahm's water cement ratio law in detail. 6

OR

4. (a) What are the various causes of bleeding and segregation in plastic Concrete ? 6
- (b) Explain in brief various types of curing methods. 7
5. (a) Describe the various factors affecting the compressive strength of Concrete. 7
- (b) Comparison between cube strength and cylinder strength. 6

OR

6. Write short notes on : (any **THREE**)
- (a) Bond between concrete and steel reinforcement 5
- (b) Fatigue strength of concrete 4
- (c) Split cylinder test. 4
- (d) Accelerated Curing Test 4
7. (a) Describe IS-10262 method on concrete mix design. 7

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Contd.

- (b) What are the drawbacks of using CaCl_2 as an accelerator ? 7

OR

8. (a) Calculate the quantity of water to be added per bag of cement in Cement concrete of 1:2:4 ratio by volume with water cement ratio as 0.6 by weight. The aggregates available in the field are dry and the absorption capacity of fine aggregate and coarse aggregate is 1.0% and 2.0% by volume respectively. 7
- (b) Distinguish between plasticizers and superplasticizers. 7
9. (a) What aspects are to be investigated for high performance concrete in Complex exposure conditions ? 7
- (b) What are the factors affecting creep ? Discuss in detail. 6

OR

10. (a) What is ferrocement ? What are its applications ? 7
- (b) What is shrinkage ? How can it be controlled ? 6
11. (a) What are the causes of deterioration of concrete ? 6
- (b) Discuss the various causes of cracks in concrete. 7

OR

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12. Write notes on :

- | | |
|--------------------------|---|
| (a) Sulphate attack | 5 |
| (b) Non destructive test | 4 |
| (c) Repair of cracks. | 4 |