

Seat  
No.

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मजल - 002

## Concrete Technology (113103)

P. Pages : 2

Time : Three Hours

Max. Marks : 80

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Attempt **any two** questions from each unit.
5. Neat diagrams must be drawn wherever necessary.
6. Figures to the right indicate full marks.

### UNIT - I

1. a) Describe important effects of  $C_3A$ ,  $C_2S$  and  $C_3S$  in comment. 4  
b) Explain advantages of gap grading. How gap grading is noticed on grading curve. 4
2. a) What are the requirements of water to be used for making concrete. 4  
b) Discuss properties and applications of rapid hardening cement. 4
3. a) Write a note on rediset cement. 4  
b) Define flakiness and elongation index why do we determine these index. 4

### UNIT - II

4. a) List the various methods of transportation of concrete. 4  
b) What is meant by curing of concrete what are the method of curing. 4
5. a) Define workability and state the factor affecting workability. 4  
b) Describe creep. How creep is controlled. 4
6. a) What is the importance of compaction ? How compaction is achieved at site. 4  
b) Write on correct placing of concrete under different conditions with neat diagram. 4

**UNIT - III**

7. a) What is admixture ? Explain need of accelerator in concrete. 4
- b) What are the different groups of light weight concrete. 4
8. a) Explain advantages and disadvantages of Polymer concrete. 4
- b) List the precautions to be taken during concreting in hot weather. 4
9. Write short notes on : 8
- i) Concreting in cold weather.
- ii) Types of fibres used in F.R.C.

**UNIT - IV**

10. a) State the objectives of concrete mix design. 4
- b) Why the trial mixer are necessary in concrete mix design. 4
11. Write the steps for I. S. method of concrete mix design. 8
12. a) List the various methods for concrete mix design and explain need of rapid method of mix design. 4
- b) Explain the terms : 4
- Target mean strength, mean strength, variance, standard deviation.

**UNIT - V**

13. a) What are the advantages and limitations of non destructive tests. 4
- b) Define carbonation and list the factors affecting carbonation. 4
14. a) List the methods of corrosion control and discuss any one. 4
- b) What is ultrasonic pulse velocity method and state the factors affecting measurement of pulse velocity. 4
15. a) Write a note on cracks due to drying shrinkage. 4
- b) Discuss methods of controlling sulphate attack. 4

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