

Roll No. ....

Total Pages : 03

BT-7/D-19

37052

CONCRETE TECHNOLOGY

CE-423E/CE-423N

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What are the factors affecting the properties of concrete ? Explain the grades of concrete. 10
- (b) Write a short note on concept of Quality control. 5
2. Explain the following :
- (i) Portland cement
  - (ii) Rapid Hardening cement
  - (iii) Hydration of cement
  - (iv) Classification and characteristics of aggregates. 15

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Unit II

3. (a) What are the requirements of workability ? Explain compacting factor test for evaluation of workability. 8
- (b) Explain the following in brief :
- (i) Batching
  - (ii) Mixing
  - (iii) Transportation .
  - (iv) Compaction. 7
4. (a) How is Young's modulus of Elasticity of concrete can be determined ? Discuss the thermal properties of concrete. http://www.kuonline.in 8
- (b) How the concrete structures can be prevented from sulphate attack ? 7

Unit III

5. What is the significance of non-destructive tests ? Explain the Rebound Hammer and Ultrasonic pulse velocity techniques in detail. 15
6. What are the causes of concrete deterioration and how can it be prevented ? 15

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**Unit IV**

7. (a) Explain the symptoms and diagnosis of Distress. **8**  
(b) Discuss the evaluation and repair of cracks. **7**
8. Explain the following in detail :  
(a) Light weight concrete and its properties **7**  
(b) Waste material based concrete and its utility. **8**