



18CV44

**Fourth Semester B.E. Degree Examination, Dec.2024/Jan.2025**

**Concrete Technology**

Time: 3 hrs.

Max. Marks: 100

**Note :** 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. IS code : 10262 : 2019 is permitted.

**Module-1**

- 1 a. Briefly explain the manufacturing of cement by wet process. (10 Marks)
- b. Explain the constituents of cement with their percentage and their function. (10 Marks)

OR

- 2 a. What are admixtures? Classify them and briefly explain their role in concrete technology. (10 Marks)
- b. Explain the importance of size, shape and texture of aggregates. (10 Marks)

**Module-2**

- 3 a. Define Workability. Explain the factors affecting workability of fresh concrete. (10 Marks)
- b. Write short notes on segregation and bleeding. (10 Marks)

OR

- 4 a. Briefly explain the importance of curing and explain 4 different methods of curing of concrete. (10 Marks)
- b. Mention various stages involved in manufacturing of concrete. Discuss any two stages. (10 Marks)

**Module-3**

- 5 a. Define Shrinkage and creep of concrete. Discuss about factors affecting shrinkage of concrete. (10 Marks)
- b. Mention non – destructive tests conducted on hardened concrete. Explain any two of them. (10 Marks)

OR

- 6 a. What is durability of concrete? What are the factors affecting durability of concrete? (10 Marks)
- b. What is maturity of concrete? Explain its significance in gaining the strength of concrete. (10 Marks)

**Module-4**

- 7 a. What is the significance of concrete mix design? Write the steps involved in it using IS : 10262 – 2009 code. (14 Marks)
- b. Discuss the variables in proportioning of concrete. (06 Marks)

OR

- 8 Arrive at a mix proportion for concrete of mix grade M25 to suit the following given data :  
Max. size of aggregate – 20 mm  
Slump required – 100 mm  
Quality control – good  
Exposure condition – mild [RCC]  
Cement – 53 grade OPC  
Specific gravity of cement – 3.15  
Specific gravity of FA and CA – 2.56 & 2.74 respectively  
Water absorption – 0.5 % for CA  
1 % for FA  
Fine aggregate conforming to zone II  
Chemical admixture – Super plasticizer. (20 Marks)

**Module-5**

- 9 a. Mention the materials used in self compacting concrete. State advantage and disadvantage of self compacting concrete. (10 Marks)
  - b. Discuss the advantages and disadvantages of Ready mix concrete. (10 Marks)
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OR **BANGALORE - 560 037**
- 10 a. What is Light weight concrete? State the characteristics of light weight concrete. (10 Marks)
  - b. Write short notes on fibre reinforced concrete. (10 Marks)

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