



CBCS SCHEME

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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)
- OR**
- 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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