



CBCS SCHEME

21CV62

Sixth Semester B.E./B.Tech. Degree Examination, June / July 2026

Concrete Technology

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the manufacturing of cement by wet process with a flow chart. (10 Marks)
- b. List out Bogue's compounds and explain their contribution towards gaining of strength of cement. (10 Marks)

OR

- 2 a. Explain the importance of size, shape and texture of aggregate. (10 Marks)
- b. Explain the procedure of aggregate flakiness and elongation index. (10 Marks)

Module-2

- 3 a. Explain the factors affecting workability of fresh concrete. (10 Marks)
- b. Define Workability. How do you measure the workability of the concrete by slump cone apparatus? (10 Marks)

OR

- 4 a. Explain : i) Batching ii) Mixing (10 Marks)
- b. Why curing is needed? Explain different method of curing of concrete. (10 Marks)

Module-3

- 5 Explain significance of concrete mix design and write the steps involved in concrete mix design as per IS code and also discuss the variables in proportioning of concrete. (20 Marks)

OR

- 6 Design a concrete mix for grade M₂₅
 - i) Grade designation : M₂₅
 - ii) Type of cement : OPC 43 grade
 - iii) Maximum nominal size of aggregate and 20 mm down
 - iv) Minimum cement content : 300 kg / m³
 - v) Water cement ratio : 0.5
 - vi) Workability : 75 mm slump
 - vii) No chemical admixture
 - viii) Fine aggregate : zone II
 - ix) Exposure condition : moderate
 - x) Method of concrete placing : manual
 - xi) Maximum cement content: 450 kg/m³
 - xii) Specific gravity of cement: 3.15
 - xiii) Specific gravity of coarse aggregate : 2.8
 - xiv) Water absorption of coarse aggregate : 1%
 - xv) Free surface moisture : nil
 - xvi) Specific gravity of fine aggregate : 2.65
 - xvii) Water absorption of fine aggregate : 2 %
 - xviii) Free surface moisture : 2%

(20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-4

- 7 a. Explain the factors influencing strength of concrete. (10 Marks)
b. Mention non destructive test conducted on concrete. Explain any two method. (10 Marks)

OR

- 8 a. Explain the factors affecting modulus of elasticity. (10 Marks)
b. Explain :
i) Water cement ratio
ii) Gel space ratio
iii) Maturity concept
iv) Modulus of elasticity
v) Poissons ration. (10 Marks)

Module-5

- 9 a. What is Shrinkage of concrete? Explain the factors influencing shrinkage of concrete. (10 Marks)
b. Explain the process of carbonation, freezing and thawing in concrete. (10 Marks)

OR

- 10 a. What is sulphate attack on concrete? Explain the method of controlling sulphate attack. (10 Marks)
b. Explain construction joints and expansion joints. (10 Marks)

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