CET LIBRARY BANGALORE-49

CBCS SCHEME

USN | | | | | | | | | | |

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.

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-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 M_{25}

i) Grade designation : M_{25}
ii) Type of cement : OPC 43 grade
iii) Maximum nominal size of aggregate and 20 mm down
iv) Minimum cement content : 300 kg / m^3
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/m^3
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 aggregare : 2 %
xviii) Free surface moisture : 2% **(20 Marks)**

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) Poissions 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)**

* * * * *

VTU-01-06-2026 08:46:30am EP - EP - EP -