



CBCS SCHEME

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18CV44

Fourth Semester B.E. Degree Examination, June/July 2023

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 manufacture of cement by wet process with a flow chart. (08 Marks)
- b. Explain the initial setting time and final setting time test procedure of cement. (08 Marks)
- c. Describe the hydration of cement. (04 Marks)

OR

- 2 a. Explain the procedure of Aggregate Crushing Value Test. (08 Marks)
- b. Explain about (i) Acceleration (ii) Retarders (08 Marks)
- c. Explain about the Rice Husk Ash. (04 Marks)

Module-2

- 3 a. Define workability. How do you measure the workability of the concrete by slump cone apparatus? (08 Marks)
- b. Explain the process of manufacturing of concrete. (08 Marks)
- c. Explain about (i) Segregation (ii) Bleeding. (04 Marks)

OR

- 4 a. What are the different methods of curing of concrete? Explain any two methods in detail. (08 Marks)
- b. What are the factors affecting the workability of the concrete? Explain them briefly. (08 Marks)
- c. Explain how heat of hydration is controlled in mass concrete works. (04 Marks)

Module-3

- 5 a. What are the factors influencing the strength of the concrete? Explain any two factors which affect the strength of the concrete in detail. (08 Marks)
- b. Define shrinkage of concrete. Explain about (i) Plastic shrinkage (ii) Drying shrinkage. (08 Marks)
- c. Define creep. What are the factors affecting creep. (04 Marks)

OR

- 6 a. Explain in detail (i) Sulphate attack (ii) Chloride attack (08 Marks)
- b. Explain the corrosion. How do you control the corrosion of reinforcement? (08 Marks)
- c. Explain the rebound Hammer Test in detail. (04 Marks)

Module-4

- 7 a. Explain the selection criteria of ingredients used for Mix Design in brief. (08 Marks)
- b. Illustrate the steps to be followed as per IS recommendation method of Mix Design. (08 Marks)
- c. Mention the different methods of Mix Design. (04 Marks)

OR

8 a. Determine the Mix proportion for a concrete Mix grade of M20 with the following data:

- (i) Specific gravity of cement = 3.15
 - (ii) Maximum size of coarse aggregate = 20 mm
 - (iii) Specific gravity of coarse aggregate = 2.60
 - (iv) Specific gravity of fine aggregate = 2.60
 - (v) Degree of quality control = good
 - (vi) Type of exposure = mild
 - (vii) Water absorption of C.A and F.A = 0.5% and 1.0%
- Assume any other data if required.

(16 Marks)

b. Define the terms: (i) Standard deviation (ii) Coefficient of variation

(04 Marks)

Module-5

9 a. What is RMC? Explain briefly the methods of concreting and advantages of RMC. (10 Marks)

b. Mention the need of self compacting concrete. Mention its application and properties. List out the different tests carried out for determining SCC. (10 Marks)

OR

10 a. Write a short notes on the following:

- (i) Fiber reinforced concrete
- (ii) Light weight concrete

(06 Marks)

b. Explain about:

- (i) Geo polymer concrete
- (ii) (ii) High strength concrete

(06 Marks)

(08 Marks)

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