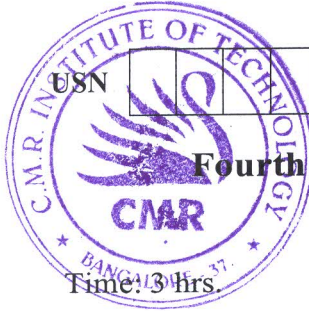


CBCS SCHEME



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

Concrete Technology

18CV44

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)

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- 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 (06 Marks)
 - (ii) Light weight concrete
- b. Explain about:
- (i) Geo polymer concrete (06 Marks)
 - (ii) High strength concrete (08 Marks)
