



Term Evaluation (Even) Semester Examination March 2025

Roll no.....

Name of the Course: B. Tech (Civil Engineering)

Semester: IV

Name of the Paper: Concrete Technology

Paper Code: TCE -404

Time: 1.5 hour

Maximum Marks: 50

Note:

- (i) Answer all the questions by choosing any one of the sub-questions
- (ii) Each question carries 10 marks.

Q1.

- a. Enumerate various tests conducted on cement to access its characteristics. Explain any one test in detail

CO..1.. (10 Marks)

OR

- b. Explain the significance of water requirement in cement. How does the water-cement ratio affect the strength and durability of concrete?

Q2.

- a. What are the different types of cement?

CO..1.. (10 Marks)

OR

- b. Discuss the chemical composition of cement?

Q3.

- a. What are the benefits and challenges of using waste materials as partial replacements for natural aggregates? Discuss with reference to IS 383 specifications.

CO..2.. (10 Marks)

OR

- b. Describe the quality requirements of water for mixing and curing concrete as per IS 456. What are the effects of using impure water in concrete?

Q4.

- a. Explain the acceptable limits of pH value and chloride content in water used for concrete. How does seawater affect the durability of reinforced concrete structures?

CO..2.. (10 Marks)

OR

- b. Discuss the impact of different water impurities on the setting time and strength of cement. How can water quality be tested before use in construction?

Q5.

- a. Discuss the different types of cement available in the market. Explain their composition and specific uses in construction.

CO..2.. (10 Marks)

OR

- b. Discuss the importance of size, shape, and texture of aggregates.