



**K. K. Wagh Institute of Engineering Education & Research, Nashik**  
(An Autonomous Institute From A.Y. 2022-23)

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:IV
Class:SY Civil Engineering	Program:B.Tech Civil Engineering
Branch Code:CIV	Pattern:2022
Name of Course:Concrete Technology	Course Code:CIV222013
Max. Marks:60	Duration:2.30 Hrs.

**Instructions:** Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

**Question No. 1 Attempt following Question**

- 1a) Explain Dry process of manufacturing of Portland cement ? (6) CO1

**Question No. 2 Attempt following Question**

- 2a) Explain any one method to measure workability ? (6) CO3

**Question No. 3 Attempt following Question**

- 3a) Enlist I.S. requirements for Concrete Mix Design (CMD) for environmental exposure condition, and minimum cement content? (6) CO5

**OR**

- 3b) Enlist factors affecting the Concrete Mix Design (CMD) and explain any one in detail (6) CO5

- 3c) Explain the steps for Concrete Mix Design by D.O.E. method in detail? (10) CO5

**OR**

- 3d) Explain the steps for Concrete Mix Design by I.S. code method in detail? (10) CO5

**Question No. 4 Attempt following Question**

- 4a) What are the special problems encountered in Cold weather concreting? How are they rectified? (6) CO2

**OR**

- 4b) Define and Explain Light Weight Concrete ? (6) CO2

4c) Write short notes on FRC (5) CO2

**OR**

4d) Explain High Density Concrete? (5) CO2

4e) Explain in detail Tremix concrete? (5) CO2

**OR**

4f) What do you understand by RMC ? (5) CO2

**Question No. 5 Attempt following Question**

5a) Explain in detail permeability and factors affecting permeability of the concrete ? (6) CO4

**OR**

5b) Explain process of preparation of surface for repairs along with its importance ? (6) CO4

5c) Explain Sulphate attack on concrete? (5) CO4

**OR**

5d) Write short note on Corrosion monitoring techniques and preventive measures ? (5) CO4

5e) Explain retrofitting of concrete structures by using carbon fibre ? (5) CO4

**OR**

5f) What is evaluation of Crack and why is it necessary? (5) CO4

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