



**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 2 pages.
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**

- a) Enlist physical properties of cement. Explain any one in detail? (6) CO1

**Question No. 2 Attempt following Question**

- a) Explain any one method of curing of concrete with neat sketch? (6) CO3

**Question No. 3 Attempt following Question**

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

**OR**

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

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

**OR**

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

**Question No. 4 Attempt following Question**

- a) Enlist the concrete batching plant components. Draw a neat sketch of concrete batching plant? (6) CO2

**OR**

- b) Compare cold weathering concreting and hot weathering concreting (with any 6 points)? (6) CO2

- c) Describe Self Compacting Concrete? (5) CO2

**OR**

- d) Explain the High Density Concrete? (5) CO2
- e) Explain in detail Geo – Polymer concrete ? (5) CO2

**OR**

- f) What do you understand by “Ferro – Cement”? (5) CO2

**Question No. 5 Attempt following Question**

- a) Enlist various factors affecting the durability of concrete? Explain any one in detail? (6) CO4

**OR**

- b) Describe carbonation of concrete? (6) CO4
- c) Explain acid attack on concrete? (5) CO4

**OR**

- d) Explain chloride attack on concrete? (5) CO4
- e) Explain retrofitting of concrete structures by using fiber reinforced polymer (FRP)? (5) CO4

**OR**

- f) Explain retrofitting of concrete structures by using carbon fiber? (5) CO4

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