



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

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:VII
Class:FINAL	Program:B.Tech
Branch Code:CIV	Pattern:2022
Name of Course:Structural Audit and Retrofitting of Structures	Course Code:CIV224006C
Max. Marks:30	Duration: 1.15 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 __02__ page(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.

Marks CO

Question No. 1

- 1 Explain the difference between repairs and retrofitting with suitable examples. (3) CO 1

Question No. 2

- 2 Describe the role of visual inspection in structural audit. Mention any two limitations. (3) CO 2

Question No. 3

- 3.a) Explain the working principle of Ultrasonic Pulse Velocity (UPV) test. (4) CO 3

OR

- 3.b) What is carbonation in concrete? How is it assessed using NDT? (4) CO 3

- 3.c) Describe the impact-echo method for detecting internal flaws in concrete. (4) CO 3

OR

- 3.d) Explain the use of Thermography in evaluating distressed structures. (4) CO 3

Question No. 4

- 4.a) Explain surface preparation methods required before repair and rehabilitation. (4) CO 4

OR

- 4.b) Describe the shotcreting technique and its applications in retrofitting. (4) CO 4

- 4.c) Explain any two retrofitting techniques suitable for steel structures. (4) CO 4

OR

- 4.d) Discuss common reasons for building failures and lessons learned. (4) CO 4

Question No. 5

- 5.a) Discuss the procedure for measuring chloride content in reinforced concrete. (4) CO 3

OR

5.b) Explain the concept of moisture barrier systems in retrofitting. (4) CO 4

5.c) Explain Ferrocement jacketing and its advantages. (4) CO 4

OR

5.d) Describe the steps involved in Grouting as a repair technique. (4) CO 4

..... End of question paper.....