

Reg No : Name :



MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM

(Govt. Aided Autonomous Institution)

Fourth Semester B.Tech. Degree Examination, May, 2026

Course Code: B24CEH42

Course Name: NON-DESTRUCTIVE TESTING

Max. Marks: 100

Duration:3 Hours

PART - A: 30 Marks (10 Qns x 3 Marks)

Answer all questions

1. Define Non-Destructive Testing (NDT) in civil engineering.
2. Explain the principle of electromagnetic methods used in NDT.
3. Describe the procedure for conducting rebound hammer test on concrete.
4. List three applications of Liquid Penetrant Testing..
5. Define Ultrasonic Testing (UT).
6. Analyze the influence of cracks and voids on ultrasonic wave transmission.
7. Suggest a suitable use of ECT in checking a steel component.
8. A pavement engineer wants to locate buried utility lines without excavation. Which NDT method would you suggest and why?
9. How is NDT useful in bridge inspection?
10. Why should NDT results be interpreted as per codes?

PART - B: 70 Marks (5 Qns x 14 Marks)

Answer any One full question from each module.

Module 1

11. Illustrate about any four wave phenomenon involved in NDT.

OR

12. Discuss the characteristics of composite materials and their testing requirements.

Module 2

13. Compare dry and wet magnetic particle testing methods.

OR

14. Discuss about the surface inspection of bridge structures.

Module 3

15. Discuss about ultra sonic testing equipment

OR

16. Discuss about the key characteristics of X ray radiation and Gamma ray radiation.

Module 4

17. Explain how infrared thermography is used for moisture detection and thermal imaging in buildings.

OR

18. List and explain various emerging technologies used in civil engineering non-destructive testing.

Module 5

19. Discuss any two case studies involving the application of NDT in construction investigations.

OR

20. Explain how standard procedures improve accuracy, safety, and consistency in NDT.
