

Code: 20ME4702D

IV B.Tech - I Semester – Regular Examinations - DECEMBER 2023

**NON-DESTRUCTIVE TESTING
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.

2. All parts of Question must be answered in one place.

BL – Blooms Level

CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Explain various steps involved in liquid penetrant testing.	L2	CO1	7 M
	b)	Discuss various types of Non-destructive testing materials.	L2	CO1	7 M
OR					
2	a)	Explain computer enhanced visual system for Visual inspection.	L2	CO2	7 M
	b)	Discuss briefly about effectiveness and limitations of liquid penetrant testing.	L2	CO1	7 M
UNIT-II					
3	a)	Explain the Magnetic particle inspection test in detail.	L2	CO1	7 M
	b)	Narrate one application of ECT in detail.	L2	CO2	7 M
OR					

4	a)	Explain Eddy Current Testing method. What is sensitivity in ECT?	L2	CO2	7 M
	b)	Discuss in detail of the standardization and calibration of Magnetic particle test.	L2	CO1	7 M
UNIT-III					
5	a)	Illustrate the interpretations and guidelines for acceptance of ultrasonic testing.	L3	CO2	7 M
	b)	Explain with suitable example the applications of Acoustic emission testing.	L3	CO2	7 M
OR					
6	a)	Discuss in brief the pulse echo ultrasonic testing technique and its application.	L2	CO2	7 M
	b)	Discuss the method used for structural integrity assessment.	L2	CO1	7 M
UNIT-IV					
7	a)	Explain with two examples, how to interpret the defects in welding by radiographic method.	L3	CO2	7 M
	b)	Explain the various applications of thermography testing.	L2	CO1	7 M
OR					
8	a)	Explain film processing in radiography testing.	L2	CO2	7 M
	b)	Discuss the limitations of thermography testing.	L2	CO1	7 M

UNIT-V

9	a)	Discuss about various aspects to be considered for the selection of suitable NDT methods for inspection of pressure vessels.	L2	CO3	7 M
	b)	Explain about the application of NDE in pipe lines.	L2	CO3	7 M

OR

10	a)	Discuss about various aspects to be considered for the selection of suitable NDT methods for inspection of castings.	L2	CO3	7 M
	b)	Explain about the application of NDE in castings.	L2	CO3	7 M