U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester: VII**
Branch: Mechanical Engineering **Duration: 3 hrs.**
Course Code: 20ME7DENDT **Max Marks: 100**
Course: Non-Destructive Testing

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	CO	PO	Marks
1	a)	Briefly explain the scope and advantages of NDT.	CO1	PO1	**10**
	b)	Explain the factors affecting eddy current response.	CO3	PO1	**10**
		OR			
2	a)	With a neat sketch explain the method of using flexible fiber optic borescope.	CO3	PO1	**10**
	b)	Explain the types of probes and typical applications of eddy current testing.	CO3	PO1	**10**
		UNIT - II			
3	a)	Explain the precautions to be taken and the applications of liquid penetrant testing.	CO1 CO3	PO1	**10**
	b)	Describe the optimal characteristics required of a penetrant.	CO1 CO3	PO1	**10**
		OR			
4	a)	With a flow diagram explain the solvent-removable liquid penetrant inspection method.	CO1	PO1	**10**
	b)	Discuss in detail importance of wetting the surface of a specimen in Liquid penetrant inspection with suitable sketches.	CO1	PO1	**10**
		UNIT - III			
5	a)	With a neat diagram, explain the processing steps involved in Magnetic Particle Inspection.	CO1 CO3	PO1	**10**
	b)	Explain with a neat sketch any 2 methods of generating magnetic field.	CO1 CO3	PO1	**10**
		OR			
6	a)	Explain required properties of magnetic particles for MPT.	CO2	PO1	**10**
	b)	Discuss the importance of direction of the Magnetic Field with suitable sketches.	CO2 CO3	PO1	**10**

			UNIT - IV			
	7	a)	Explain in brief the radiographic test procedure.	*CO1* *CO3* *CO4*	*PO1*	**10**
		b)	Explain the steps involved in film processing in radiography.	*CO3* *CO4*	*PO1*	**10**
			OR			
	8	a)	Discuss characteristics of γ -rays.	*CO1*	*PO1*	**04**
		b)	Compare Film radiography and Real time radiography.	*CO3*	*PO1,* *PO5*	**06**
		c)	Discuss the important radiographic sources.	*CO1*	*PO1*	**10**
			UNIT - V			
	9	a)	Explain the different types of ultrasonic probes and their working.	*CO1* *CO2*	*PO1*	**10**
		b)	Elaborate any 5 advantages and disadvantages of ultrasonic testing.	*CO1*	*PO1*	**10**
			OR			
	10	a)	Explain the principle of operation of ultrasonic testing.	*CO1* *CO3*	*PO1*	**10**
		b)	Explain with sketches, how ultrasonic-testing is used in inspection of castings.	*CO3* *CO4*	*PO1*	**10**

****