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

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E.

Branch: Mechanical Engineering

Course Code: 20ME7DENDT

Course: Non-Destructive Testing

Semester: VII

Duration: 3 hrs.

Max Marks: 100

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

			UNIT - I		<i>CO</i>	<i>PO</i>	Marks
1 a) List out the advantages and disadvantages of NDT over DT.					<i>CO2</i>	<i>PO1</i>	10
b) Sketch and explain flexible borescope with its application.					<i>CO1</i>	<i>PO1</i>	10
OR							
2 a) How is the eddy current test used for the inspection of material thickness? Sketch and explain the same.					<i>CO1</i>	<i>PO1</i>	10
b) Explain the principal operating variables encountered in the eddy current inspection.					<i>CO4</i>	<i>PO1</i>	10
			UNIT - II				
3 a) List out the desired properties of the penetrant used in liquid penetrant testing.					<i>CO1</i>	<i>PO1</i>	10
b) Explain how post emulsifiable hydrophilic liquid penetrant testing is performed with a flow diagram.					<i>CO1</i>	<i>PO1</i>	10
UNIT - III							
4 a) Explain the steps involved in the magnetic particle inspection system with an illustration.					<i>CO1</i>	<i>PO1</i>	10
b) Explain the characteristics of magnetic particles used in the magnetic particle inspection system.					<i>CO1</i>	<i>PO1</i>	10
			UNIT - IV				
5 a) Explain the principle of the radiography test with a neat sketch.					<i>CO4</i>	<i>PO1</i>	10
b) Explain how X-rays are produced in radiography test.					<i>CO1</i>	<i>PO1</i>	10
UNIT - V							
6 a) Describe how ultrasonic waves are classified. And explain the same.					<i>CO2</i>	<i>PO1</i>	10

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.

	b)	Explain with a neat sketch of through transmission method of ultrasonic testing.	CO4	PO1	10
		OR			
7	a)	List out advantages and disadvantages of ultrasonic inspection.	CO3	PO1	10
	b)	Explain different types of pulse echo methods and its importance In NDT.	CO1	PO1	10

B.M.S.C.E. - ODD SEM 2023-24