

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM  
(AUTONOMOUS)  
IV B.Tech II Semester Supplementary Examinations, May - 2024**

**NON DESTRUCTIVE EVALUATION  
(MECHANICAL ENGINEERING)**

Time: 3 hours

Max. Marks: 70 M

**Answer ONE Question from each Unit  
All Questions Carry Equal Marks**

Q. No.	Questions	BTL	CO	Marks
<b>UNIT – I</b>				
1.	a) Discuss the radiography in welding briefly	K1	CO1	7 M
	b) Explain importance of NDT over Destructive Testing methods	K2	CO1	7 M
<b>OR</b>				
2.	a) What are the different NDT methods? State its advantages and limitations	K2	CO1	7 M
	b) Discuss the safety aspects of industrial radiography	K1	CO1	7 M
<b>UNIT – II</b>				
3.	a) Explain about the guidelines for Acceptance, Rejection - Effectiveness of Ultrasonic Testing	K2	CO2	7 M
	b) Write the applications and advantages of ultrasonic testing	K2	CO2	7 M
<b>OR</b>				
4.	a) Write about limitations of ultrasonic Testing	K2	CO2	7 M
	b) Explain the principle of wave propagation in ultrasonic testing	K2	CO2	7 M
<b>UNIT – III</b>				
5.	a) Write the application and limitations of Liquid Penetrant Testing	K2	CO3	7 M
	b) Explain the methods of removing excess penetrant from the surface of the component	K2	CO3	7 M
<b>OR</b>				
6.	a) Compare eddy current test with Liquid penetrant test	K2	CO3	7 M
	b) Explain the principle of liquid penetrant test	K2	CO3	7 M
<b>UNIT – IV</b>				
7.	a) How magnetization and demagnetization takes place in magnetic materials?	K1	CO4	7 M
	b) What are the various methods used to magnetize the specimen, with neat diagram	K2	CO4	7 M
<b>OR</b>				
8.	a) What are the basic properties specimen to qualify for magnetic particle test?	K2	CO4	7 M
	b) Explain the procedure of magnetic particle testing and state its limitations	K2	CO4	7 M

UNIT – V					
9.	a)	What is Thermography? Explain different types of Thermography?	K2	CO5	7 M
	b)	Explain about span of NDE activities in Chemical Industries.	K2	CO5	7 M
OR					
10.	a)	Briefly explain about the applications of NDE in Offshore Gas and Petroleum Projects?	K2	CO5	7 M
	b)	Write the most common NDE applications in the areas of the castings and welded constructions.	K1	CO5	7 M