

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

**NON DESTRUCTIVE EVALUATION**  
**(ME)**

Time: 3 hours

Max. Marks: 60

Question Paper Consists of **Part-A** and **Part-B**  
 Answer **ALL** questions from **Part-A**,  
 Answer any **FOUR** Questions from **Part-B**

<b>PART-A</b>				
<b>[6x2=12M]</b>				
<b>Q.No.</b>	<b>Question</b>	<b>BTL</b>	<b>CO</b>	<b>Marks</b>
1.	a) Write the importance of the radiographic test	K1	CO1	[2M]
	b) What is Piezo-electric effect?	K1	CO2	[2M]
	c) Write about advantages of Liquid Penetrant Test?	K2	CO3	[2M]
	d) Write about Principle of magnetic particle test?	K2	CO4	[2M]
	e) What is the difference between contact and non-contact thermal inspection	K2	CO5	[2M]
	f) Write about the span of NDE activities in railways	K2	CO6	[2M]
<b>PART-B</b>				
<b>[4x12=48M]</b>				
2.	a) List out various safety aspects that are followed in industrial radiography	K2	CO1	[6M]
	b) Differentiate clearly between X-ray and Gamma radiography techniques	K2	CO1	[6M]
3.	a) Explain about ultrasonic transducers and their characteristics	K2	CO2	[6M]
	b) Write the applications and limitations of ultrasonic testing	K2	CO2	[6M]
4.	a) Briefly explain the method of Liquid Penetrant Testing	K1	CO3	[6M]
	b) Discuss the factors which affect visual testing method. Explain its remedies	K2	CO3	[6M]
5.	a) What are the pre-requisites for a material to be tested through magnetic particle NDT?	K2	CO4	[6M]
	b) Explain the procedure of magnetic particle testing	K2	CO4	[6M]
6.	a) What are the applications of infrared imaging in aerospace?	K2	CO5	[6M]
	b) Explain about infrared detectors	K2	CO5	[6M]
7.	a) Explain about the applications of NDE in pressure vessels	K2	CO6	[6M]
	b) Explain about span of NDE activities in Nuclear industries	K2	CO6	[6M]