QP Code: SN22BTECH590 | Reg. No | | | | | | | | | | | AR 21

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech(Seventh Semester - Regular) Examinations, November – 2025

22BMEPE47021-Non-Destructive Evaluation and Testing

(Mechanical)

Time: 3 hrs | Maximum: 70 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

		CO #	Blooms Level
Q.1.	Answer ***ALL*** questions		
a.	Name the parameter that leads to failure of a material.	CO1	K1
b.	Describe the limitations of the NDT method.	CO1	K2
c.	Compare Fluorescent penetrant and Visible penetrant	CO2	K1
d.	List the variables that are influencing the results in ultrasonic testing.	CO3	K2
e.	Define Film density.	CO4	K2

PART – B **(15 x 4=60 Marks)**

		Marks	CO #	Blooms Level
	Answer ***all*** the questions			
2. a.	Explain in detail about the factors influencing the selection of NDT methods	8	CO1	K2
b.	Illustrate the working principle and types of visual inspection technique with suitable sketch	7	CO1	K3
c.	Classify the different types of destructive and non - destructive testing methods and applications	8	CO1	K3
d.	Describe with suitable sketch about the casting defects during casting Process.	7	CO1	K2
3.a.	List out various characteristics of developers.	8	CO2	K1
b.	Explain the Post-emulsifiable - lipophilie and solvent removable methods in liquid penetrant testing	7	CO2	K2
	(OR)			
c.	Summarize the following portable magnetization equipment (i) Permanent magnet. (ii) Electromagnetic yokes	8	CO2	K4
d.	Narrate Principles and methods of magnetization	7	CO2	K3
4.a.	Explain with suitable sketch about Circular Magnetization	8	CO3	K2
b.	List and Illustrate with neat sketch about Ultrasonic transducers used in Ultrasonic testing method	7	C03	K3
	(OR)			
c.	Discuss the Straight beam ultrasonic inspection method with neat sketch	8	CO3	K2
d.	List the applications of Acoustic emission test	7	CO3	K4
5.a.	Explain about the process of Neutron Radiography and Computed Tomography.	8	CO4	K2
b.	Illustrate the components of Xray generator with suitable sketch.	7	CO4	K4
	(OR)			
c.	Describe about Fluoroscopy Testing with neat diagram.	8	CO4	K2
d.	State the various classes of films and explain their characteristics.	7	CO4	K2

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