QP Code: RD17001031 Reg. No | | | | | | | | | | | AR 17

GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, December – 2020

(Seventh Semester)

BMEPE7024 - Non Destructive Evaluation and Testing

(Mechanical Engineering)

Time: 2 hrs Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) (1 x 10 = 10 Marks)

Q.1. Answer ***ALL*** questions			[CO#]	[PO#]
a.	Non Destructive type of testing is used to determine		CO1	PO1
	(i) chemical composition	(ii) corrosion of metals		
	(iii) structure	(iv) all of these		
b.	Visual inspection are used for detecting		CO1	PO1
	(i) larger damage	(ii) smaller damage		
	(iii) internal damage	(iv) all of these		
c.	Which of the following is not a type of Non destructive testing		CO1	PO1
	(i) compressive test	(ii) visual testing		
	(iii) ultrasonic testing	(iv) eddy current testing		
d.	Liquid Penetrant Inspection detects		CO2	PO1
	(i) surface breakage defects	(ii) non porus materials		
	(iii) closed surface	(iv) all of these		
e.	Other name for liquid penetrating test		CO2	PO1
	(i) Magnetic Particle Inspection	(ii) Eddy Current		
	(iii) Dye Penetrant Inspection	(iv) None of the these		
f.	The penetrant must possess a number of important characteristics		CO2	PO1
	(i) remain in the defect but remove easily from the surface of the part	(ii) not be harmful to the material being tested or the inspector		
	(iii) be drawn into surface breaking defects by capillary action	(iv) All of these		
g.	Ultrasonics uses sound waves		CO3	PO1
	(i) low frequency	(ii) high frequency		
	(iii) medium frequency	(iv) None of the these		
h.	The transfer of sound from the ultrasonic probe needs medium, which is usually		CO3	PO1
	(i) water	(ii) lubricant		
	(iii) air	(iv) fluid		
i.	The amount of absorption of rays depends on the density and thickness of the material.		CO4	PO1
	(i)True	(ii)False		
j.	The maximum MA which can be used for a single radiographic exposure is related to the		CO4	PO1

(i) KV (ii) Anode rotation speed

(iii) Exposure time (iv) focal spot size

PART – B: (Short Answer Questions) (2 x 5 = 10 Marks)

Q.2. Answer ***ALL*** questions	[CO#]	[PO#]
a. List out the merits of NDT methods.	CO1	PO1
b. List the effect of residual magnetism.	CO2	PO1
c. Define transducer.	CO3	PO1
d. Define Penetrameter.	CO4	PO1
e. Give the application of computed tomography.	CO4	PO5

PART – C: (Long Answer Questions) (6 x 5 = 30 Marks)

Answer ***ANY FIVE*** questions	Marks	[CO#]	[PO#]
3. With the help of suitable examples, differentiate between destructive and non destructive testing techniques.	(6)	CO1	PO1
4. Discuss the factors influencing the visual testing method.	(6)	CO1	PO1
5. Explain about the advantages and disadvantages of LPI with neat sketches?	(6)	CO2	PO1
6. Discuss about the principle of demagnetisation and its implications in NDT.	(6)	CO2	PO1
7. Discuss the various magnetisation methods and explain contact current flow method.	(6)	CO3	PO1
8. Explain the Acoustic Emission Technique with suitable illustrations.	(6)	CO3	PO1
9. Discuss the characteristics of films used in radiography.	(6)	CO4	PO1
10. Discuss the procedure of carrying out radiography on welded joints.	(6)	CO4	PO1

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