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BTECH
(SEM VIII) THEORY EXAMINATION 2021-22
NON DESTRUCTIVE TESTING

Time: 3 Hours**Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 10 = 20**

a.	State various properties of Liquid penetrants.
b.	What do you mean by defects?
c.	Enlist the various equipment involved in visual inspection.
d.	What do you mean by fluorescent dye?
e.	Define Bragg's Law.
f.	What is piezoelectricity?
g.	What is acoustic emission?
h.	What do you mean by Nature of radiation?
i.	What is optical inspection?
j.	What is eddy current?

SECTION B**2. Attempt any three of the following: 10x3=30**

a.	Classify different types of penetrant used in liquid penetrant test. Also discuss the role and types of Emulsifiers.
b.	Discuss Zygo Fluorescent Penetrant Test, also discuss steps involved, Application, Advantages limitations.
c.	What is Radiography? Discuss in brief about X-ray Radiography and Y-ray Radiography with suitable applications of both.
d.	With the help of neat sketch explain the working of a piezoelectric transducer.
e.	Discuss the different types of Probe used in eddy current testing with neat diagram.

SECTION C**3. Attempt any one part of the following: 10x1=10**

a.	What do you mean by Destructive testing method? Explain any one in brief. Differentiate it with NDT.
b.	Explain in brief: i. Ringing test and chalk test. ii. Magnetic particle testing

4. Attempt any one part of the following: 10x1=10

a.	What do you mean developers and what are its types? What are the standards applicable to liquid penetrant testing?
b.	What are various methods of magnetization of a ferromagnetic material? Discuss any two of them with neat diagram.

5. Attempt any one part of the following: 10x1=10

a.	What are the steps followed when conducting magnetic particle inspection? Explain the importance of magnetic field direction in flaw detection
b.	Describe in detail about Rayleigh's scattering and Compton's scattering with neat diagram.

6. Attempt any one part of the following: 10x1=10

a.	With neat sketch explain the method of ultrasonic testing and write its applications, advantages and disadvantages.
b.	How ultrasonic testing can help in medical diagnosis and inspecting welded joints?

7. Attempt any one part of the following: 10x1=10

a.	Discuss the inspection of tubes of a heat exchanger and Fatigue crack inspection by Eddy current testing.
b.	Describe the inspection of rails by eddy current testing