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10AU761

Seventh Semester B.E. Degree Examination, Jan./Feb.2021
Non Destructive Testing

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. What is non-destructive testing? Mention the applications. **(06 Marks)**

b. Explain at what conditions the non-destructive testing is preferred. **(04 Marks)**

c. Explain with a neat sketch, liquid penetration test and mention its advantages and limitations. **(10 Marks)**

2 a. Explain with sketches any two methods of generating the magnetic field. **(08 Marks)**

b. With the help of a neat sketch, explain the basic steps used in the magnetic particle inspection. State its applications and limitations. **(12 Marks)**

3 a. With appropriate sketch, explain the principle used in the Eddy current inspection method. **(10 Marks)**

b. Write a note on the applications of Eddy current inspection method. Mention the advantages and disadvantages. **(10 Marks)**

4 a. Explain the reflection technique of microwave inspection. **(10 Marks)**

b. Discuss the advantages, disadvantages and applications of microwave inspection. **(10 Marks)**

PART – B

5 a. Explain pulse echo method of ultrasonic inspection. **(10 Marks)**

b. Explain with sketch of A-Scan system. **(10 Marks)**

6 a. Explain general characteristics of ultrasonic waves. **(10 Marks)**

b. Discuss the advantages, disadvantages and applications of ultrasonic inspection. **(10 Marks)**

7 a. Explain the principle of radiography. **(06 Marks)**

b. Sketch and explain working of x-ray tube as a source of X-radiography. **(10 Marks)**

c. List out the applications of radiography. **(04 Marks)**

8 a. Sketch and explain holographic recording. **(10 Marks)**

b. Write short notes on the following:

i) Acoustic holography

ii) Applications of holography. **(10 Marks)**

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