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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)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.