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10AU761

Seventh Semester B.E. Degree Examination, July/August 2021
Non-Destructive Testing

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Explain with neat sketch construction and working of Helium leak detector. (10 Marks)
b. What are the steps involved in liquid penetrant testing? Explain with figures. (10 Marks)
- 2 a. With the help of neat sketch, briefly explain following Electro – magnetization methods used in Magnetic Particle Inspection (MPI).
i) Contact current flow method (using metal prods). (10 Marks)
ii) Electromagnetic yoke method. (10 Marks)
b. Briefly explain the general steps involved in Magnetic Particle Inspection (MPI). (10 Marks)
- 3 a. Explain different types of operating variables affecting performance in Eddy current inspection. (10 Marks)
b. Differentiate between absolute coil arrangement and differential coil arrangement. (10 Marks)
- 4 a. With a neat sketch explain microwave holography. (10 Marks)
b. Write detailed applications of microwave holography. Mention their advantages and disadvantages. (10 Marks)
- 5 a. Write a short note on Basic Equipment used in Ultra Sonic Inspection (USI). (08 Marks)
b. Explain general characteristics of Ultra Sonic Waves. (12 Marks)
- 6 a. Explain the general characteristics of ultrasonic inspection. (10 Marks)
b. Explain operational variables in ultrasonic inspection. (10 Marks)
- 7 a. What is the basic principle of radiographic inspection? Discuss its advantages and disadvantages. (10 Marks)
b. With neat sketches explain applications of radiography:
(i) Weldments (ii) Tubular structures (iii) Complex shapes. (10 Marks)
- 8 a. With a neat sketch, explain the working of Optical holographic recording. (10 Marks)
b. Write a note on :
i) Systems and techniques of Acoustic holography. (10 Marks)
ii) Applications of Acoustic holography. (10 Marks)

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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.