

CBCS SCHEME

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15MA831

Eighth Semester B.E. Degree Examination, November 2020

Non-Destructive Testing

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions irrespective of modules.

Module-1

- 1 a. Give the comparison between Destructive and Non-Destructive Testing (NDT). (06 Marks)
b. List the benefits of NDT and explain in brief. (04 Marks)
c. List the advantages, disadvantages and applications of NDT. (06 Marks)
- 2 a. Explain in brief, different types of optical aids used for visual inspection. (06 Marks)
b. Sketch and explain 'Metallograph' NDT technique used as optical device for visual inspection to measure defects like cracks and blow holes in castings. (10 Marks)

Module-2

- 3 a. Explain the different steps involved in Liquid penetration or dye penetrant test used for detecting flaws in metals. (10 Marks)
b. List the advantages, disadvantages and applications of liquid penetrant inspection. (06 Marks)
- 4 a. Explain different methods used for magnetization of material in Magnetic Particle Inspection (MPI). (10 Marks)
b. Explain in brief any one equipment used for Magnetic Particle Testing. (06 Marks)

Module-3

- 5 a. List and explain different types of coils. Used in Eddy current inspection. (10 Marks)
b. Explain the working principle of 'PROBOLOG'. (06 Marks)
- 6 a. With a neat sketch, explain the basic principle involved in Acoustic Emission testing and list the potential capabilities of it. (10 Marks)
b. Discuss the various applications of Acoustic emission testing. (06 Marks)

Module-4

- 7 a. What are ultrasonic waves and briefly explain different types of waves used in ultrasonic testing. (06 Marks)
b. Explain any two types of techniques used in ultrasonic testing. (10 Marks)
- 8 a. Explain different types of data presentation or scanning used in ultrasonic reflection testing. (06 Marks)
b. Explain different types of transducers used in ultrasonic testing. (06 Marks)
c. List the advantages and applications of ultrasonic testing. (04 Marks)

Module-5

- 9 a. Briefly explain Radiography screens. (04 Marks)
b. List and explain any one type of Radiography inspection technique. (08 Marks)
c. Discuss about Radiation protection. (04 Marks)
- 10 a. Explain the working principle of Acoustic holography. (08 Marks)
b. Discuss the important applications of holography technique. (04 Marks)
c. List the advantages of holography techniques. (04 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.