



10AE756

Seventh Semester B.E. Degree Examination, Aug./Sept.2020
Non Destructive Testing

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Name and explain in brief the defects in conventional materials and typical composite materials. (10 Marks)
b. Name the NDT techniques and give brief introduction to non destructive evaluation techniques. (10 Marks)
- 2 a. What is radiographic inspection? Explain. (10 Marks)
b. What is gamma ray radiography? Give applications of gamma ray radiography. (10 Marks)
- 3 a. Explain sound propagation in elastic material. (10 Marks)
b. Enlist the advantages and disadvantages of ultrasonic testing. (10 Marks)
- 4 a. What are different types of scanning systems adopted in ultrasonic inspection and explain briefly? (12 Marks)
b. Explain briefly : i) Ultrasonic test standards ii) Tube inspection. (08 Marks)

PART – B

- 5 a. Explain the principle of liquid penetrant test. (08 Marks)
b. What are the equipments used in liquid penetrant testing? Explain briefly. (08 Marks)
c. What are the safety precautions to be followed during liquid penetrant test? (04 Marks)
- 6 a. Explain the following methods of generating magnetic field with the help of neat sketch.
i) Induction method ii) solenoid coil method. (10 Marks)
b. Explain the steps involved in magnetic particle test with the help of a process flow chart. (10 Marks)
- 7 a. Explain eddy current test system with the help of a neat sketch. (08 Marks)
b. Explain the factors affecting eddy current with the help of neat sketches. (12 Marks)
- 8 a. Explain acoustic emission test with the help of a neat sketch. (08 Marks)
b. Explain the working principle of thermal inspection. (06 Marks)
c. Explain the holographic recording with the help of a neat sketch. (06 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.