

Code No: R164203B

R16

Set No. 1

IV B.Tech II Semester Advanced Supplementary Examinations, Aug/Sep - 2022

NON - DESTRUCTIVE EVALUATION

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any FOUR questions from Part-B

PART-A (14 Marks)

1. a) List out the advantages of radio graphic testing [3]
- b) What are the characteristics of Ultrasonic Transducers? [3]
- c) Which materials are inspected by Liquid penetrant test [2]
- d) What is meant by demagnetization [2]
- e) Define the transmittance and reflectance of thermal object [2]
- f) What are the common defects found in castings [2]

PART-B (4x14 = 56 Marks)

2. a) Explain the procedure in production of X-rays [7]
- b) What are the safety methods to be followed in radio graphic testing [7]
3. a) Explain the importance of mode conversion in ultrasonic testing [7]
- b) What are the methods used in the production of ultrasonic waves [7]
4. a) Discuss about the different penetrants used in liquid penetrant test [7]
- b) List out the functions of developers in liquid penetrant test [7]
5. a) Explain the procedure involved for the preparation of test specimen in Magnetic particle testing [7]
- b) Mention the disadvantages and applications of magnetic particle testing [7]
6. What is meant by thermal detector? Explain the working of various thermal detectors used thermography [14]
7. a) Explain how the different NDT techniques used in the coal mining industry to detect the coal mines [7]
- b) Explain the various NDT methods used in the railway components defects [7]

