

Code No: RT42034A

R13**Set No. 1****IV B.Tech II Semester Supplementary Examinations, July/August- 2017****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 THREE questions from Part-B*

PART-A (22 Marks)

1. a) Write about the applications, limitations of X and Gamma Rays? [4]
b) Explain about reflection? [3]
c) Write about limitations of Liquid Penetrant Test? [4]
d) Write about Magnetic Materials? [4]
e) Explain about principle of eddy-current testing? [3]
f) Write about the importance of NDE in Coal Mining Industry? [4]

PART-B (3x16 = 48 Marks)

2. a) Explain about sources of X and Gamma Rays and their interaction with matter in detail? [10]
b) List out various safety aspects that are followed in industrial radiography? [6]
3. a) Explain about the guidelines for Acceptance, Rejection - Effectiveness of Ultrasonic Testing? [10]
b) Write short notes on piezoelectric effect. [6]
4. Explain about the principle and testing procedure of liquid penetrant test with neat diagrams? [16]
5. a) Explain about effective Applications and Limitations of the Magnetic Particle Test? [10]
b) How magnetization and demagnetization takes place in magnetic materials? [6]
6. a) Explain the working principle of eddy current test system with neat sketch? [8]
b) Discuss the applications of eddy current testing. [8]
7. Explain about the applications of NDE in pressure vessels, castings and welded constructions? [16]