

Model Question Paper  
B.TECH DEGREE EXAMINATION  
Seventh Semester  
**INDUSTRIAL ENGINEERING**  
**13.706.5 NON – DESTRUCTIVE TESTING TECHNIQUES ( N ) (Elective III)**

Time: 3 Hrs.

Marks :100

**PART A**

Answer all questions  
Each question carries 2 marks

1. Define non-destructive testing.
2. What are the properties of a good penetrant?
- 3 Write a note on the importance of Eye in Visual testing?
4. What is the equation for sound waves in a material?
5. What are penetrameters in radiographic testing? Mention its uses.
6. Explain Pulse Echo Testing technique.
7. Explain standard depth of penetration in Eddy current testing and its variation with frequency?
8. Name the materials which can be tested by magnetic particle testing?
9. Define any 2 testing methods for leak detection in pipelines?
10. What is the basic principle of acoustic emission test?

**PART B**

(Answer any one question out of the two from each module.  
Each question carries 20 marks.)

**Module I**

11. Compare destructive and non-destructive testing. Describe various visual inspection methods and tools used for non destructive testing.

**OR**

12. Explain the sequence of operation of Liquid penetrant testing. Differentiate fluorescent and visible dye penetrant.

**Module II**

- 13 Describe the film processing, interpretation and evaluation of test results in

Radiography testing method. Compare film radiography and real time radiography

**OR**

14 Name and explain the types of probes used in Ultrasonic testing . Impact of Piezoelectric Transducers in Ultrasonic Testing? Mention the advantages and limitations of Ultrasonic inspection

**Module III**

15 Explain demagnetization in Magnetic particle testing? How do you ensure it? Portable Equipments used in MPT?

**OR**

16 Explain the principle of Eddy current testing, benefits and applications.

**Module IV**

17 Explain thermography techniques. Mention some applications in NDT.

**OR**

18 Explain in detail, Acoustic Emission test.