

Roll No. 

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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(ME) (E-I 2011 Onwards) (Sem.-6)****NON DESTRUCTIVE TESTING**

Subject Code : DE/ME-2.4

M.Code : 71256

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION-A****1. Answer briefly :**

- a. Differentiate between destructive and non-destructive testing (NDT).
- b. How visual inspection helps in non-destructive testing?
- c. Define Magnetic hysteresis.
- d. What is significance of surface preparation for magnaflux NDT method?
- e. Define Acoustic Emission Technique.
- f. What do you understand by sonic analyzer?
- g. What are the limitations of radiographic inspection?
- h. What do you understand by measurement of thickness in ultrasonic method?
- i. Write down the factors affecting the choice of NDT method.
- j. What do you mean by photoelasticity?

### SECTION-B

2. Explain in brief the testing of underground oil pipe line for finding leak.
3. Explain the principle and applications of eddy current testing with suitable neat sketch.
4. Explain the principle and working of Xeroradiography with neat sketch.
5. Explain any one method for detection of defects in ferrous and non-ferrous metals.
6. Write the name of different methods of magnetization and demagnetization commonly practised in NDT procedure. Explain any one method.

### SECTION-C

7. Explain the principle of Acoustic Emission Testing (AET) with sketch. Write down its applications and limitations.
8. Explain the Fluorescent penetration NDT examination method. Give example with its application in aerodynamics applications.
9. Explain the following :
  - a. Photo stress in photoelasticity.
  - b. Detection of flaw in rails and tubes.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**