

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(ME) (2012 Onwards E-II) (Sem.-7,8)**

**NON-DESTRUCTIVE TESTING**

**Subject Code : DE/ME-2.4**

**M.Code : 72010**

**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 have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write a short note on following :**

- (a) Write four advantages of non destructive testing.
- (b) What is the significance of material testing?
- (c) What is the most important factor in determining the archival quality of radiographic film?
- (d) What is the difference between X and gamma rays.
- (e) What is the preferred method of removing paint prior to performing a penetrant testing?
- (f) Write the disadvantage of fluorescent magnetic particles.
- (g) List magnetization methods.
- (h) List the methods used to reduce attenuation losses in an ultrasonic test.
- (i) Write the advantages of using lower frequencies during ultrasonic testing.
- (j) What do you mean by photoelasticity?

### SECTION-B

2. “*NDT (Non Destructive Testing) has been growing, changing and expanding for nearly 100 years*”. Write a note on this statement.
3. Explain in brief rail inspection by Eddy current testing method.
4. Describe the advantages, disadvantages and applications of magnetic particle inspection.
5. Write a note on concept and applications of plane and circular polarization.
6. What is the principle of radiographic inspection? Explain the requirements of a good radiograph.

### SECTION-C

7. (a) Explain how defects in plastics are detected.  
(b) Explain the method to measure surface roughness by ultrasonic testing.
8. (a) Describe fluorescent penetration inspection.  
(b) What is the role of penetrant in liquid penetrant inspection? Discuss the important properties of penetrants.
9. Write short notes on the following :  
(a) Xeroradiography  
(b) Effect of variables on radiographs

**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.**