

11/5/2016

6E7016

Roll No. _____

Total No of Pages: **3**

6E7016

B. Tech. VI-Sem. (Main & Back) Exam., April/May-2016
Mechanical Engineering
6ME6.1A Non Destructive Evaluation and Testing
Common with PI

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks (Main & Back): 26

Instructions to Candidates:-

*Attempt any **five** questions, selecting **one** question from each unit. All Questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.*

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL

2. NIL

UNIT-I

- Q.1 (a) Differentiate between destructive and nondestructive evaluation. [8]
(b) Briefly explain the factors influencing the reliability of nondestructive testing. [8]

OR

- Q.1 Explain liquid Penetrant testing with its limitations and applications. What is the role of various penetrants and developers in liquid penetrant testing? [16]

UNIT-II

- Q.2 (a) Differentiate between X – ray and γ –ray radiography. [8]
- (b) How defects are detected in weldments using radiographic inspection technique? [8]

OR

- Q.2 Describe the X – ray film processing and reading and interpretation of radiographs in radiographic inspection. [16]

UNIT-III

- Q.3 Briefly classify and discuss the ultrasonic inspection technique with neat sketch. [16]

OR

- Q.3 (a) What is the importance of angle beam testing for identification of defects in welded objects in ultrasonic inspection? [8]
- (b) How ultrasonic NDT can be used for thickness measurement? [8]

UNIT-IV

- Q.4 Explain procedural steps of Magnetic particle Inspection technique with neat sketch. [16]

OR

- Q.4 Write short notes on:

- (a) Acoustic Emission testing
- (b) Thermography

UNIT-V

Q.5 What is the basic principle of eddy current non destructive evaluation technique? Also explain about its test system and test arrangement. [16]

OR

Q.5 Write short note on (any two) [8×2=16]

- (a) Factors affecting the eddy current testing.
 - (b) Codes and standards used in eddy current NDT.
 - (c) Applications of eddy current NDT.
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