Printed Pages : 1 **Roll No.** | | | | | | | | | | | **EME062**

B. TECH.

THEORY EXAMINATION (SEM–VIII) 2016-17

NON-DESTRUCTIVE TESTING

Time : 3 Hours ***Max. Marks : 100***

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. Attempt all parts of the following question: 10 x 2 = 20

(a) Define the term NDT.

(b) Enlist the equipments used in visual inspection..

(c) What do you mean by fluorescent dye?

(d) What are the advantages of magnetic particle inspection?

(e) What is emulsifier?

(f) What is piezoelectricity?

(g) What is acoustic emission?

(h) Explain the function of Transducers in USM.

(i) What is eddy current?

(j) Define the term "Dwell time" used in Liquid penetrant test.

SECTION – B

2. Attempt any five of the following questions: 5 x 10 = 50

(a) What are the properties the penetrants must have in order to work well? Classify different types of penetrants.

(b) What are the different sources of radiation used in radiographic inspection method?

(c) What are different methods to generate magnetic fields? Differentiate between ferro-magnetic & Non-feromagnetic materials.

(d) How ultrasonic testing can help in medical diagnosis and inspecting welded joints?

(e) Explain the technique of excess removal of penetrant from the workpiece surface.

(f) Explain photo electric effect. Enumerate the limitations of radiographic inspection.

(g) With neat sketch explain the method of ultrasonic testing and write its applications.

(h) What is scattering factor? Describe the advantages of γ-ray radiography over X-ray radiography.

SECTION – C

Attempt any two of the following questions: 2 x 15 = 30

3 With neat sketch explain the principle, equipment and methodology used in X-ray radiography test.

4 With neat sketch explain the principle and working of eddy current inspection. Write five application of eddy current inspection.

5 What are the steps followed when conducting magnetic particle inspection? Explain the importance of magnetic field direction in flaw detection.