EME062

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15
NON-DESTRUCTIVE TESTING

Time : 3 Hours]   [Total Marks : **100**

Note : Attempt all the questions. Assume missing data suitably.

Attempt any four of the following questions :   **5x4=20**

1   (a)   Differentiate between Destructive and Non Destructive testing methods.

(b)   Discuss any Six defects inspected by Non Destructive testing methods.

(c)   What do you mean by Non Destructive testing methods? Explain any one test method in brief

(d)   Differentiate between Manual inspection and Automated inspection.

(e)   What do you mean by visual inspection and what are its types?

(f)   Describe in brief about oil and whiting inspection and Hammer Test.

Attempt any two of the following questions :   10x2=20

2   (a)   Explain the working principle of magnetic particle testing with a neat sketch. Also mention its scope.

     (b)   Write short note on:

            (i)   Leak test.

            (ii)   Zyglo fluorescent penetrant test.

     (c)   Discuss in brief about skin effect, Direct method of magnetization and Wet suspension inspection.

Attempt any two of the following questions :   10x2=20

3   (a)   What are the advantages of gamma ray radiography over X- ray radiography?

     (b)   Write short note on:

            (i)   Image magnification technique

            (ii)   Compton back scatters technique.

     (c)   Mention recommendation followed in film handling.

Attempt any two of the following questions :   10x2=20

4   (a)   Explain the wave propagation modes used in ultrasonic testing.

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(b) Define Piezoelectricity with example of some piezoelectric material.

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

Attempt any two of the following questions :   10x2=20

5   (a)   Explain the working principle of eddy current testing method.

     (b)   Discuss the types of probes used in eddy current testing method.

     (c)   Explain in brief about the rail inspection by eddy current testing method.