Printed Pages: 4 EME-062

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 140858 Roll No.

B.TECH.

Theory Examination (Semester-VIII) 2015-16

NON-DESTRUCTIVE TESTING

Time : 3 Hours *Max. Marks : 100*

Section-A

Q1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2×10=20)

(a) Differentiate between DT & NDT.

(b) Enlist the different types of Penetrant.

(c) What is Fluorescent Dye?

(d) What do you mean by radiograph?

(e) Differentiate between ferro-magnetic & Non-feromagnetic materials.

inspection? What are the properties the penetrants must have in order to work well?

Q5. Explain the steps followed when conducting magnetic particle inspection? Explain the importance of magnetic field direction in flaw detection.

(f) What is scattering factor?

(g) Explain Electromagnetic induction in brief.

(h) Explain the function of Transducers in brief.

(i) What is photoelectric effect?

(j) What are different methods to generate magnetic Fields?

Section-B

Q2. Attempt any five questions from this section. **(10×5=50)**

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

(b) What are the advantages, disadvantages and applications of ultrasonic testing?

(c) What is piezoelectricity? Explain the method of ultrasonic testing with neat sketch.

(d) With neat sketch explain the principle and working of

eddy current inspection.

(e) Explain about visual inspection method and optical holographic method.

(f) Classify different types of penetrants used in Liquid penetrant test. Explain the technique of excess removal of penetrant from the workpiece surface.

(g) What are the advantages, disadvantages and applications of Magnetic particle inspection?

(h) Explain the following:

(i) Rayleigh's scattering

(ii) Compton's scattering

Section-C

Note: Attempt any two questions from this section. **(15×2=30)**

Q3. What are the different sources of radiation used in radiographic inspection method? Describe the advantages of ?-ray radiography over X-ray radiography.

Q4. Explain the basic processing steps of a liquid penetrant

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