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Total No. of Questions: 09

B.Tech.(ME) (E-I 2012 Onwards) (Sem.-6) NON DESTRUCTIVE TESTING

Subject Code: DE/ME-2.4 M.Code: 71256

Time: 3 Hrs. Max. Marks: 60

INSTRUCTION TO CANDIDATES:

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

Q1. Answer briefly:

- a) Differentiate between destructive and non-destructive testing.
- b) What is Magnetic hysteresis?
- c) What are the Surface & Sub Surface Defects?
- d) List the desirable properties required for a good penetrant used in liquid penetrant inspection (LPI).
- e) Explain the principle of sonic material analyser.
- f) Explain the method of generation of X-rays.
- g) What is concrete test hammer?
- h) Explain the Interpretation of Radiograph.
- i) Explain various safety aspects required in radiography testing.
- j) What do you understand by photo elasticity?



SECTION-B

- Q2 Discuss most commonly used Non-Destructive methods. What are the selection criteria for any NDT Method?
- Q3 With neat sketches explain about the different inspection techniques in radiography testing (RT).
- Q4 Differentiate between direct and indirect method of magnetisation. Write the advantages and disadvantages of both methods.
- Q5 Explain about the working of ultrasonic transducer. Include necessary figures.
- Q6 Discuss the defect detection methods for plastics materials.

SECTION-C

- Q7 a) Explain the ultrasonic testing for roughness of surfaces.
 - b) Explain about any four checking devices used in magnetic particle inspection (MPI).
- Q8 a) Differentiate between X-ray radiography & Gamma Radiography Testing.
 - b) Explain the sperry flaw detection method for inspection of rails and tubes giving a neat sketch.
- Q9 a) A steel component is manufactured through forging. State the possible defects on its surface, subsurface and bulk and explain briefly the possible NDT techniques for their detection.
 - b) What is dye penetrant test? Explain cleaners, penetrants and developers.

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.

2 | M - 71256 (S2)-2123