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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (ME) (2012 Onwards E-II) (Sem.-7) NON-DESTRUCTIVE TESTING Subject Code : DE/ME-2.4 M.Code : 72010

Time: 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

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

SECTION-A

Write short notes on following :

- 1. Differentiate between destructive and non-destructive testing.
- 2. Give salient features of Acoustic Emission Technique.
- 3. Name two of the NDT techniques that can be used to detect internal defects.
- 4. Explain the principle of Eddy current testing & its applications.
- 5. Which materials are subjected to magnetic particle testing?
- 6. State safety precaution in Industrial radiography.
- 7. What is concrete test hammer?
- 8. Which NDT method is used for measuring thickness of materials?
- 9. Differentiate between ordinary penetrant testing and fluorescent penetrant testing.
- 10. Explain the term subject contrast and IQI in radiographic testing.



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SECTION-B

- 11. State how different NDT techniques are selected for defect detection.
- 12. Explain principle of radiographic testing and give its applications and limitations.
- 13. Explain various methods of magnetization & demagnetization commonly practiced in Non-destructive testing procedure.
- 14. Explain the principle of Ultrasonic Testing. Give its applications, advantages and limitations.
- 15. Give a list of leak testing methods highlighting their principle and applications.

SECTION-C

- 16. a) Explain the nondestructive method by which moisture distribution in wood can be predicted.
 - b) State dye penetrant test principle and explain capillary action, contact angle, adhesive force and cohesive force. Mention limitations of dye penetrant test.
- 17. a) Discuss the defect detection methods for ferrous and nonferrous materials.
 - b) What is photoelastic material? Explain the phenomena of stress analysis using photoelasticity giving a neat sketch.
- 18. a) Describe sonic material analyzer, its working, applications using an appropriate sketch.
 - b) Explain with suitable sketch: Circular Magnetization, and Longitudinal Magnetization.

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.