Roll No. | | | | | | | | | | | | | 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.

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.