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Question Paper Code : 41379

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Eighth Semester
Mechanical Engineering
ME 6019 – NON DESTRUCTIVE TESTING AND MATERIALS
(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. Give the importance of using NDT.
2. List out limitations of NDT methods.
3. What are the principle methods available in Penetrant Tests ?
4. Give the merits and demerits of Dry Developers.
5. Define Thermography.
6. Write the principle of Eddy Current Testing.
7. Name the Standard calibration blocks used for UT.
8. Give the properties of Acoustic waves.
9. Give the properties of X rays and Gamma rays.
10. What is meant by intensifying screens ?



PART – B

(5×16=80 Marks)

11. a) i) Briefly outlines the difference between the NDT test and destructive test. (8)
ii) Discuss the defects that can be detected by unaided visual inspection. (8)

(OR)

- b) i) Explain the sequence of operations of liquid penetrant testing. (10)
ii) Write the advantages and disadvantages of liquid penetrant testing method compare to other NDT method. (6)

12. a) Explain the working principle of Magnetic particle testing with neat sketches. Also list out the advantages of Magnetic particle Testing. (16)

(OR)

- b) i) Compare and contrast the contact and non contact inspection techniques. (8)
ii) List out the Magnetisation Methods. Also explain contact current flow method. (8)

13. a) Explain the principle of Eddy current testing. Write the advantages and disadvantages of Eddy current testing. (16)

(OR)

- b) i) What are the methods available for checking in Thermography ? Explain any one method. (10)
ii) List out the advantages of Infrared Thermography. (6)

14. a) i) Briefly explain the wave propagation of ultrasonic sound. (10)
ii) Write the advantages and disadvantages of ultrasonic testing. (6)

(OR)

- b) Explain the principle and applications of acoustic emission technique. (16)

15. a) i) Describe with suitable sketch the radiographic imaging techniques. (10)
ii) Write short notes on Radiographic film. (6)

(OR)

- b) i) Explain the three step process of computed radiography and mention the significant advantages. (8)
ii) List out the various classes of films and explain their characteristics. (8)