EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2016

(2013 SCHEME)

13.806.2 NON DESTRUCTIVE TESTING

Time: 3 Hours Max.Marks:100

N.B: Answer all questions from PART- A and any one question from each module in PART-B.

PART – A

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1. What are the limitations of eddy current testing?
2. What is the significance of NDT?
3. Mention few areas of applications of LPT .
4. What is dwell time in liquid penetrant testing?
5. How eddy current is produced?
6. What is the difference between defects and discontinuities?
7. What are the factors affecting the choice of NDT methods.
8. Write briefly about Real-Time Radiography.
9. Mention the different types of ultrasonic waves.
10. Compare X-rays and Gamma rays

. **(10*2=20)**

PART – B

MODULE 01

11.(a) What do you understand by Non-destructive testing? Explain the roll of Non-destructive testing on manufacturing today. **(12)**

(b) Explain the procedure of visual inspection test and acceptance criteria of job. **(8)**

(Or)

12. (a) Describe the working principle of eddy current inspection in brief. **(10)**

(b) Compare destructive and non-destructive testing **(10)**

MODULE 02

13. Explain the working principle and steps involved in liquid penetrant test for detecting surface defect on the heat treated object. **(20)**

(Or)

14. Explain the importance of penetrant and developer in a good penetrant and developer what are the required properties ? Explain. **(20)**

MODULE 03

15. Explain demagnetization in Magnetic particle testing? How do you ensure it? **(20)**

(Or)

16. (a) Explain the different methods to generate magnetic fields. **(12)**
(b) Discuss the need and necessity of demagnetization of object after magnetic particle testing.and its types. **(8)**

MODULE 04

17. (a) Mention the properties of X and gamma rays. **(10)**

(b) What do you understand by radiation ? Explain with the help of neat sketch the method of X- ray generation. **(10)**

(Or)

18. (a) What are the advantages of using ultrasonic inspection as compared to the X- ray radiography ? Explain two ultrasonic inspection techniques for detection of sub Iayer cracks in the materials. **(12)**
(b) Explain the various factors affecting pulse generated from the ultrasonic probe. **(8)**