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D – 4677

Reg. No. : .....

Name : .....

**Fifth Semester B.Tech. Degree Examination, January 2018  
(2013 Scheme)**

**13.506.6 : NON DESTRUCTIVE TESTING (MPU)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

1. What is meant by in-situ metallography ?
2. State the different applications of holographic testing.
3. What is the principle of neutron radiography ?
4. Define Radiographic sensitivity.
5. Classify the different types of ultrasonic waves.
6. State the criteria required for ultrasonic testing.
7. Mention the limitations of magnetic particle testing.
8. What are the basic factors affecting the thermal measurements ?
9. List the different types of eddy current techniques.
10. Write the limitation of acoustics emission techniques of NDT. **(10×2=20 Marks)**

**PART – B**

**Module – I**

11. i) What do you understand by non-destructive testing and explain the role of NDT on manufacturing today ? **10**
- ii) Explain the procedure of visual inspection test and acceptance criteria of job. **10**

**OR**

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

P.T.O.



**Module – II**

13. With a neat sketch explain the working of an X-ray tube. 20

OR

14. Explain the process of MPI. Discuss the need and necessity of demagnetization of object after magnetic testing technique. 20

**Module – III**

15. i) What are the advantageous of using ultrasonic inspection as compared to the X-ray radiography ? Explain any two ultrasonic inspections testing for the deduction of sub layer cracks in materials. 20

OR

16. i) Explain the ultrasonic testing flaw detector architecture and design of ultrasonic probes with neat sketches. 14

ii) Write short notes on field sensitive probes and suspending liquids in magnetography. 6

**Module – IV**

17. i) Select a suitable Non Contact – Non Destructive testing method for the inspection of Space Shuttle leading edge and explain about that method. 10

ii) Explain AET techniques. Mention some application in NDT. 10

OR

18. a) Explain magneto optic imaging technique using in eddy current technique. 10

b) Briefly explain the different Leak Detection methods. 10

**(4x20=80 Marks)**

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