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B – 3299

Reg. No. :

Name :

**Fifth Semester B.Tech. Degree Examination, December 2016
(2013 Scheme)
13.506.6 : NON DESTRUCTIVE TESTING (MPU)**

Time : 3 Hours

Max. Marks : 100

Instruction : Answer *all* questions from Part – A and *one full* question from *each* Module of Part – B.

PART – A

1. List out the basic requirements of a good developer.
2. Mention the importance of in-situ metallography in NDT.
3. Explain the principle of holography.
4. Differentiate between film Radiography and digital Radiography.
5. Name the different types of probes for UST.
6. List any one advantage and disadvantage of MPT.
7. Suggest a suitable method to inspect heat exchanger tubes.
8. Write short note on skin effect.
9. In what way AET differ from UST ?
10. Explain the principle of thermography. (10×2=20 Marks)

PART – B

Module – 1

11. a) Explain LPT principle and procedure. Explain the sensitivity of LPT and what are the applications. 10
- b) Explain the various optical aids assisting visual inspection. 10

OR

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12. a) Explain the importance of NDT in engineering. Differentiate between destructive and nondestructive testing. 10
- b) Explain the detailed procedure in-situ metallographic inspection and its application. 10

Module – 2

13. a) Explain the generation and properties of X-rays and Gamma-rays. Explain radiographic sensitivity. 10
- b) Explain the method in computed tomography. Write short note on IQI. 10

OR

14. a) Differentiate between X-ray radiography and X-ray fluoroscopy. 10
- b) What are the advantages limitations and applications of X-ray radiography ? 10

Module – 3

15. a) Explain the different methods of ultrasonic flaw detection. 10
- b) Explain the characteristics of ultrasonic waves and their generation. 10

OR

16. a) Illustrate the methods of magnetization and procedure of MPT. 10
- b) Explain the advantages, limitations and applications of UST. 10

Module – 4

17. a) Illustrate instrumentation system for AET. What are the applications of AET ? 10
- b) With a neat sketch explain the working of Halogen leak Detection system. 10

OR

18. a) Explain the principle of ECT. What are the different methods ? 10
- b) Discuss magnetization curves and magnetic hysteresis. 10
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