



Reg. No. :

Name :

Fifth Semester B.Tech. Degree Examination, November 2011

(Elective – I)

08.506.13 : NON DESTRUCTIVE TESTING (MPU)

Time : 3 Hours

Max. Marks : 100

Instruction : Answer all questions from Part A and any one from each Module of Part B.

PART – A (4 marks each)

1. What is the importance of in-situ metallography in NDT ?
2. Describe the penetrant testing materials.
3. What are the factors to be considered in the selection of NDT methods ?
4. Differentiate between pulse echo system and resonance system.
5. Differentiate between X-ray and gamma ray radiography.
6. Explain the method 'Neutron radiography'.
7. What are the advantages of magnetic particle testing ?
8. Describe the principle of comparator.
9. Explain the principle of holography.
10. What are the areas of application of ECT ?



(4×10=40 Marks)

PART – B

MODULE – I

11. a) Explain the importance of NDT in engineering. Differentiate between destructive and non destructive testing. 10
- b) Explain the procedure and application of visual inspection methods using optical aids. 10

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12. a) Explain the 3 principal methods of LPT. 10
- b) Explain the sensitivity of LPT. What are the advantages, limitations and applications of LPT. 10

MODULE – II

13. a) Explain the different types of ultrasonic waves, their generation and characteristics. 10
- b) Explain Radiographic imaging and Radiographic sensitivity. Explain safety in industrial radiography and methods of radiation control. 10
14. a) Explain in detail how X-rays may be employed as a means of flaw detection. Describe one method of locating the exact position of a flaw in a casting using this process. 10
- b) Explain the different types of ultrasonic flaw detection methods. Explain the advantages, limitations and areas of application of ultrasonic testing. 10

MODULE – III

15. a) Explain the principle of eddy current testing. What are the different methods of ECT ? 10
- b) Describe the instrumentation system for AET with schematic diagram and explain. What are the applications of AET ? 10
16. a) Explain the detailed procedure for testing a component using MPT. 10
- b) Explain thermographic method of testing. What are the applications ? 10
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