Model Question

Fifth Semester B.Tech Degree Examination

(2013 Scheme)

(ELECTIVE 1)

13.506.6 **NON DESTRUCTIVE TESTING (MPU)**

Time: 3 hrs Max. Marks: 100

Instruction: Answer **all** *questions from part* ***A*** *and* ***one full*** *question from* ***each*** *module of part* ***B***

PART - A

(***10 x 2 = 20 Marks)***

1. Explain the importance of dynamic inspection
2. What is the function of an emulsifier in penetrant testing
3. Differentiate between X-ray and gamma ray radiography
4. Mention the principle of holography
5. What are the advantages of MPT?
6. Suggest a suitable method to inspect heat exchanger tubes
7. What are the different types of probes for UST?
8. Write short note on IQI. Is it essential to use IQI?
9. Mention the principle of thermography
10. In what way AET differ from UST?

PART B

Module - 1

11. a) Explain the various instruments used for visual inspection **10**

    b)Explain three principal methods of LPT. What are the advantages and applications **10**

OR

12. a) Compare destructive and non destructive testing methods giving their relative advantages and disadvantages **10**

    b) What is in-situ metallography? Explain the process and its application. **10**

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Module - 2

13. a) Explain radiographic imaging and radiographic sensitivity **10**

b) Describe one method of locating the exact position of a flaw in a casting using X-radiography

OR **10**

14. a) Differentiate between X-ray radiograpy and X- ray fluoroscopy **10**

b) Differentiate between X-ray and gamma ray radiography. What are the advantages of gamma radiographic equipment **10**

Module - 3

15. a) Explain the different methods of ultrasonic flaw detection **10**

b) Explain the characteristics of ultrasonic waves and their generation

OR **10**

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) Explain leak testing methods **10**

OR

18. a) Explain the principle of ECT. What are the different methods? **10**

b).Discuss thermographic inspection and the areas of application **10**