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B.E./B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APR / MAY 2014

MANUFACTURING ENGINEERING

SEVENTH SEMESTER

**MF9022 – NON-DESTRUCTIVE TESTING**

(REGULATIONS 2008)

Time: 3 hr

Maximum Mark: 100

Answer ALL questions

PART A – (10 x 2 = 20 marks)

1. List the materials involved in Liquid penetrant testing method.
2. Mention the different classes of magnetic particle in magnetic particle inspection test.
3. What is the principle of neutron radiography?
4. What are the various unsharpnesses that contribute to the definition of the image in radiography test?
5. List the different type of eddy current techniques.
6. What is the limitation of eddy current testing?
7. What is acoustic impedance?
8. State the criteria for the probe selection for ultra sonic testing.
9. What is acoustic emission ?
10. State the different application of holographic testing.

PART B – (16 x 5 = 80 marks)

11. Discuss magnetic particle inspection test in detail. (16)
12. a. Discuss about the various parameters influencing the radiographic imaging. (16)  
(OR)  
b. Discuss the different methods of radiographic inspection with neat diagrams. (16)
13. a. Describe the instrumentation for eddy current testing in detail. (16)  
(OR)  
b. Discuss single frequency and multi frequency eddy current testing in detail. (16)

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

(OR)

b. Explain various methods of inspection in ultrasonic testing method. (16)

15. a. Explain holographic testing techniques using illustrative sketches. (16)

(OR)

b. Explain the acoustic emission test setup with neat sketch. (16)