Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VII SEMESTER B. TECH (MECHANICAL/IP ENGG.) END SEMESTER MAKE-UP EXAMINATIONS, DECEMBER 2018

SUBJECT: NON DESTRUCTIVE TESTING [PE-V] [MME 4024]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Draw neat and proportionate sketches where ever necessary

1A.	What are the benefits of NDT? Differentiate between destructive and nondestructive testing.	4
1B.	List the advantages and disadvantages of LPT. Mention the applications of LPT.	3
1C.	Mention the advantages and disadvantages of various types of developers used in LPT.	3
2A.	Explain with neat sketches, the different method of direct & indirect magnetization of parts in magnetic particle inspection.	4
2B.	Explain the procedure insteps to perform dry magnetic particle and wet magnetic particle inspection.	3
2C.	Explain the procedures followed in liquid penetrate testing	3
3A.	With a neat diagram explain basic principles of eddy current inspection.	4
3B.	Mention different methods of ultrasonic testing and explain any one method with a neat sketch.	3
3C.	List the advantages and disadvantages of eddy current testing	3
4A.	Find the geometrical un-sharpness to test 100 mm material by an X-ray inspection system with the following settings: source size 30 micron, distance from source to bottom surface of the material is 1000 mm, distance between top surface of material to detector is 170 mm.	2

4B. Explain the following in X-Ray radiography

a. Linear attenuation coefficient
b. X-Ray film composition and characteristic curve
c. Half valve layer 4
d. Application of Snell's law

4C. Write a short note on filters used in radiography 2

4D. Explain the basic principle of ultrasonic testing 2

5A. Explain the data presentation in ultrasonic testing using A-scan, B-scan & C-scan. 3

5B. Explain different types of transducers used in ultrasonic test 3

5C. Explain briefly the applications of acoustic emission testing 2

5D. Mention the applications of thermography and briefly explain any one of the applications 2

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