

## VII SEMESTER B. TECH (MECHANICAL & I&P ENGG.) END SEMESTER

## **MAKE-UP EXAMINATIONS, DEC 2017**

# SUBJECT: PE-5 - NONDESTRUCTIVE TESTING [MME 4024]

### **REVISED CREDIT SYSTEM**

Time: 3 Hours

MAX. MARKS: 50

#### **Instructions to Candidates:**

Answer ALL the questions & write neat sketches wherever is applicable.

- 1A What are the benefits of NDT? Differentiate between destructive and a nondestructive testing.
- **1B** List the advantages and disadvantages of LPT. Mention the applications of LPT. **3**
- 1C Mention the advantages and disadvantages of various types of developer used 3 in LPT.
- 2A Explain with a neat sketches different method of direct & indirect magnetization 4 of parts in magnetic particle inspection.
- 2B Explain steps of procedure to perform dry magnetic particle and wet magnetic 3 particle inspection.
- 2C Why demagnetization is required after magnetic particle testing? Explain 3 different methods of demagnetization.
- **3A** With a neat diagram explain basic principles of eddy current inspection. **4**
- 3B List different types of probes used in eddy current testing and explain briefly any 3 three types.
- **3C** Briefly explain the following terms related to eddy current inspection **3** 
  - I. Lift-off
  - II. Edge-effect
  - III. Skin effect
- **4A** Explain manual and automatic radiographic film processing and evaluation. **3**

4B	Explain with a sketch the geometric un-sharpness in radiography and factors		2
	which are controlling it.		
4C	Ment	ion the variables that affect the density of the radiograph image.	2
4D	Explain application of image quality indicators in radiography		3
5A	Explain the data presentation in ultrasonic testing using A-scan. B-scan & C-		4
	scan.		
5B	Explain briefly the following with respect to ultrasound test.		3
	I.	Couplant.	
	П.	Acoustic impedance.	

- III. Reflection coefficients.
- 5C Explain with a schematic sketch the acoustic emission testing, how this differ 3 from other NDT methods.