

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET A**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JAN 2024**

**Semester :** Semester VII - 2020

**Course Code :** MEC3039

**Course Name :** Non-Destructive Testing

**Program :** B.Tech.

**Date :** 08-JAN-2024

**Time :** 9:30AM - 12:30 PM

**Max Marks :** 100

**Weightage :** 50%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**5 X 2M = 10M**

1. Define Non-Destructive Testing?  
(CO1) [Knowledge]
2. Enlist any 4 Non-Destructive Testing Methods.  
(CO1) [Knowledge]
3. Define Permeability in Magnetic Particle inspection.  
(CO2) [Knowledge]
4. Enlist any two instruments used in Ultrasonic testing.  
(CO3) [Knowledge]
5. Define Flux Density in Magnetic Particle inspection.  
(CO2) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**5 X 10M = 50M**

6. Airbus wants to conduct visual inspection of the new wings design. Visual inspection can be conducted as Aided and Unaided inspection. Comment on the above two methods and compare both with detail explanation and neat sketch.  
(CO1) [Comprehension]
7. There are various ways a material can be magnetized to conduct a Non Destructive testing. Suggest any three methods of Magnetization and explain them with a neat sketch.  
(CO2) [Comprehension]

8. Film processing is one of the important steps in Real Time Radiography. Explain the steps of Film Processing in Real time Radiography with neat sketch.  
(CO4) [Comprehension]
9. In Real time radiography, screen plays pivotal role in the interpretation of the results. Explain the salt screens construction and its usage in RTR.  
(CO4) [Comprehension]
10. Manish is a senior testing engineer at TELCO, Jamshedpur and is conducting Eddy Current Testing on new designed components, he is struck with the importance of Mutual Inductance in Eddy Current Testing, As A support Engineer to Manish explain the importance Mutual Inductance in ECT.  
(CO5) [Comprehension]

### **PART C**

**ANSWER ALL THE QUESTIONS**

**2 X 20M = 40M**

11. The process of the image of the object by converting the X-rays into light on the fluorescent screen is known as fluoroscopy. Explain the usage of above statement in real time radiography with a neat sketch.  
(CO4) [Application]
12. Eddy Currents are generated if the magnetic coil is brought near to the surface of conducting material. Explain the working principle of Eddy Current Testing with a neat sketch.  
(CO5) [Application]