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**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - OCT 2023**

Semester : Semester VII - 2020

Course Code : MEC3039

Course Name : Sem VII - MEC3039 - Non-Destructive Testing

Program : B. TECH

Date : 31-OCT-2023

Time : 2:00PM - 3:30PM

Max Marks : 60

Weightage : 30%

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 2 = 10M)

1. Enlist any 4 Non-Destructive Testing Methods. (CO1) [Knowledge]
2. Differentiate between Destructive and Non Destructive Testing. (CO1) [Knowledge]
3. Define Hysteresis Loop in Magnetic Particle inspection (CO2) [Knowledge]
4. Define Flux Density in Magnetic Particle inspection. (CO2) [Knowledge]
5. Define Ultrasonic Testing Technique. (CO3) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(2 X 15 = 30M)

6. 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. Testing Procedures are a critical aspect in Magnetic particle Inspection testing. Tarun wants to conduct a continuous testing during a MPI test. Suggest the types of continuous testing, Tarun can opt and explain them in detail. (CO2) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

8. Ultrasonic testing is a NDT techniques that uses acoustic impedance and various waves are utilized in the testing procedures. Identify the different types of waves used in testing and explain them in detail with a neat diagram.

(CO3) [Application]