

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

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

**Semester :** Semester IV - 2021

**Course Code :** MEC2015

**Course Name :** Sem IV - MEC2015 - Metrology and Mechanical Measurements

**Program :** MEC

**Date :** 13-APR-2023

**Time :** 9.30AM - 11.00AM

**Max Marks :** 50

**Weightage :** 25%

**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**

**(10 X 1 = 10M)**

1. Which of the following is not a name of slip gauges?  
a) Gauge Blocks (CO1) [Knowledge]  
b) Johannsen Gauges  
c) Gage Blocks  
d) Linear Gauges
2. What is the length of the Imperial standard yard?  
a) 38 m (CO1) [Knowledge]  
b) 38 mm  
c) 38 inches  
d) 38 cm
3. Gold plugs are inserted into Yard. How many lines are engraved on a plug?  
a) 2 transversely and 2 longitudinally (CO1) [Knowledge]  
b) 3 transversely and 2 longitudinally  
c) 2 transversely and 3 longitudinally  
d) 3 transversely and 3 longitudinally

4. Which of the following is not used in making of sine bars?  
a) High carbon (CO1) [Knowledge]  
b) High chromium  
c) Corrosion resistant steel  
d) Aluminium
5. SI unit of temperature is  
a) Celcius (CO1) [Knowledge]  
b) Farenheit  
c) Kelvin  
d) All of the above
6. Which of the following statement is true for pneumatic gauges?  
Statement 1: Can be used to check multiple dimensions.  
Statement 2: A float is present inside the bore.  
a) T, T (CO1) [Knowledge]  
b) F, T  
c) F, F  
d) T, F
7. What is the advantage of mechanical comparator over others?  
a) Less moving parts (CO1) [Knowledge]  
b) No need of external supply  
c) No error due to parallax  
d) Large range of instrument
8. One yard = \_\_\_\_\_ inch  
a) 36 (CO1) [Knowledge]  
b) 38  
c) 40  
d) 42
9. Following is the theoretical size which is common to both the parts of a mating pair  
a) Normal size (CO1,CO2) [Knowledge]  
b) Actual size  
c) Base size  
d) All of the above
10. The amount by which the actual size of a shaft is less than the actual size of mating hole in an assembly.  
a) Clearance (CO2) [Knowledge]  
b) Interference  
c) Allowance  
d) None of the above

## PART B

ANSWER ALL THE QUESTIONS

(4 X 5 = 20M)

11. What are the primary benefit of using the Wavelength Standard? (CO1) [Comprehension]
12. Summarise the need for inspection. (CO1) [Comprehension]
13. Outline the differences between Accuracy & Precision. (CO1) [Comprehension]
14. List and explain the types of fits. (CO2) [Comprehension]

### **PART C**

**ANSWER ALL THE QUESTIONS**

**(2 X 10 = 20M)**

15. Dhanith & Basavaraj two Graduate trainees at Siemens CNC systems are assigned to create device used to convert mechanical displacement into electrical signal to be later used in converting movements inside a CNC milling machine. Help them create the device. (CO1) [Application]
16. Develop a principle for a device used in applications such as precision alignment, verification of angle standards, and detection of angular movement. (CO1) [Application]