

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (ME) (Sem-6)

MECHANICAL MEASUREMENT AND METROLOGY

Subject Code : BTME602/18

M.Code : 79651

Date of Examination : 07-06-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Answer briefly :

- a) Differentiate between Line, End and Wavelength standards.
- b) Clearly explain the terms: Calibration, speed of response, threshold and resolution, fidelity.
- c) Enlist various types of transducers.
- d) Define least count of a vernier instrument. How is it determined? Explain.
- e) Define the term "Gauge Factor".
- f) Describe the working of a gear tooth vernier.
- g) What is Piezoelectric Accelerometer?
- h) Give the range of temperature measured with the help of a Pyrometer.
- i) Discuss the function of a Profile Projector.
- j) Explain "Roughness" and "Waviness" in connection with surface texture assessment.

SECTION-B

2. Differentiate between Gross, Systematic and Random errors.
3. State the principle of a micrometer. Sketch a outside micrometer and name its various parts.
4. Explain the working of an electrical comparator.
5. Describe the properties of materials used for piezoelectric transducers.
6. Explain the working principle of LVDT.

SECTION-C

7. Differentiate diagrammatically between RTD, thermistor and thermocouple.
8. Describe with a neat sketch construction and working of an instrument used for measurement of surface texture.
9. Write a note on the following :
 - a) Hydraulic load cell
 - b) Torsion bar dynamometer.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.