

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (ME) (Sem-6)
MECHANICAL MEASUREMENTS AND METROLOGY

Subject Code : BTME-602-18

M.Code : 79651

Date of Examination : 26-06-2023

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. Write briefly :

- a) Distinguish between accuracy and precision.
- b) Explain clearly the terms: Hysteresis, Dead Zone, Sensitivity and Linearity.
- c) Enlist the various types of sensors.
- d) Explain the procedure of wringing of slip gauges.
- e) Why are dummy gauges used? In what way do they affect the output of a strain gauge bridge?
- f) What is Seismic Accelerometer?
- g) Explain the measurement of temperature with a Bimetallic strip.
- h) Discuss the function of a Tool Maker's microscope.
- i) Enlist the sources of errors in manufacturing of gears.
- j) Explain "Lay" and "Sampling Length" in connection with surface texture assessment.

SECTION-B

2. Explain with the help of a flow diagram the various elements of a generalized measurement system.
3. Differentiate in detail, with the help of examples between photoemission, photovoltaic and photo conductive cells.
4. Explain the working of a mechanical comparator.
5. Investigate the working principle of Resistive Potentiometer.
6. State the principle of vernier instrument. Briefly, explain the construction and use of vernier caliper with a neat sketch.

SECTION-C

7. Explain the principle, general construction and observation of stylus type surface texture measuring instrument.
8. Describe the construction and working of optical and total radiation pyrometer for the measurement of temperature.
9. **Write a note on the following :**
 - a) Proving Ring
 - b) Servo Controlled 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.