

Roll No.

Total No. of Pages : 2

Total No. of Questions : 09

B.Tech (IE/ME) (Sem.-5)

MECHANICAL MEASUREMENT AND METROLOGY

Subject Code : ME-307

Paper ID : [A0817]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

- 1. SECTION-A is COMPULSORY.**
- 2. Attempt any FOUR questions from SECTION-B.**
- 3. Attempt any TWO questions from SECTION-C.**

SECTION-A

(10 × 2 = 20 Marks)

1. Answer the following briefly :

- (a) Explain interference fit.
- (b) Define accuracy, error and correction.
- (c) Define sensitivity.
- (d) What is a sensor?
- (e) What is the use of a dial gauge?
- (f) Define fundamental deviation.
- (g) Define a comparator? Name any two types of comparator.
- (h) Distinguish between waviness and roughness.
- (i) Define straightness.
- (j) What is an autocollimator?

SECTION-B

(4 × 5 = 20 Marks)

2. What do you understand by line, end and wavelength standards?

3. Explain the working of hydraulic and pneumatic load cells?
4. Define tolerance. What is the significance of giving tolerance?
5. Explain the three wire method of measuring effective diameter of screw threads.
6. What is a sine bar? And how it is used for angle measurement?

SECTION-C

(2 × 10 = 20 Marks)

7. (a) What are transducers and how are they classified? Explain their importance in an instrumentation process.
(b) Explain the principle and working of Tomlinson Surface Meter used for the measurement of surface roughness.
8. What are the dynamometers? How are they classified? Explain the difference between absorption, transmission and driving dynamometers.
9. Write notes on :
 - (a) Bimetallic thermometers.
 - (b) Bevel protector.