

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

Paper ID [PE305]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 5th)

ENGINEERING METROLOGY (PE-305)

Time : 03 Hours

Maximum 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

Q1)

(10 × 2 = 20)

- a) Define tolerance and allowance.
- b) What is a vernier caliper?
- c) Where do we use sine bar?
- d) What do you understand by microerrors?
- e) What is the function of a transducer?
- f) What is a dynamometer?
- g) What is an active transducer?
- h) Define gauge factor of a strain gauge.
- i) What is a pneumatic load cell?
- j) What do you understand by pitch?

Section - B

(4 × 5 = 20)

- Q2) Discuss the concept of interchangeability.
- Q3) How do the angle and pitch errors of a screw thread affect its virtual effective diameter? Discuss.
- Q4) Differentiate between absorption and transmission dynamometers.

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- Q5) Sketch a micrometer and explain its working.
- Q6) Discuss stylus method for measuring surface roughness.

Section - C

(2 × 10 = 20)

- Q7) Explain how displacement can be measured with the help of a capacitive transducer?
- Q8) Explain how a pneumatic comparators works and briefly enumerate the advantages of differential pneumatic comparators?
- Q9) Write note on:
- (a) Taylor's principle
 - (b) Pressure transducers.

