Roll No. ....

Total No. of Questions : 09]   [Total No. of Pages : 02

Paper ID [ME307]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 5th)

MECHANICAL MEASUREMENT & METROLOGY (ME - 307)

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) What do you understand by dynamic error?

b) What are random errors?

c) What is the use of a micrometer?

d) What are sensors?

e) What are unbounded gauge?

f) What is a dead weight tester gauge?

g) What is a thermocouple?

h) What is the function of a tachometer?

i) What is a hydraulic load cell?

j) What is the use of proving ring?

Section - B

(4 × 5 = 20)

Q2) What is calibration and why it is necessary? Discuss.

Q3) Explain the importance of statistical analysis of test data in measurement.

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Q4) Differentiate between bellow gauge and diaphragm gauge for pressure measurement.

Q5) What do you understand by surface roughness? How it is measured? Explain.

Q6) Enumerate the sources of error in thermocouple and explain how they are prevented.

Section - C

(2 × 10 = 20)

Q7) Describe the principle of operation of a piezo electric transducer. Identify the input and output of the system.

Q8) Explain with sketches the basic principle of working of a stroboscope for speed measurement.

Q9) Write notes on:
(a) Report writing.
(b) Strain gauge.

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