Roll No. | | | | | | | | | | | | | Total No. of Pages :02

Total No. of Questions : 09

B.Tech.(AE) (2011 Onwards) (Sem.–5)

MEASUREMENTS AND INSTRUMENTATION

Subject Code :BTAE-505

Paper ID : [A2065]

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

Q1. Write briefly :

a) Distinguish between hysteresis and dead zone by giving appropriate example.

b) Define sensitivity. Would you prefer sensitivity to be low or high for an instrument?

c) What are transducers?

d) What is absolute and gauge pressure?

e) What do you understand by calibration?

f) What is a rotameter? What is its application?

g) What is bimetallic thermometer? Which material is used in this type of thermometer?

h) What is hydraulic load cell?

i) How displacement is measured with Moiré-Fringe method?

j) What is difference between systematic and random errors?

SECTION-B

Q2. A voltmeter is used to measure a known voltage of 75 volts. Forty percent of the readings are within 0.8 volt of true value. Estimate the standard deviation for the meter and the probability of an error of 1.2 volt.

Q3. Distinguish between :

i) Active and passive transducers

ii) Input and output transducers.
Illustrate your answer with suitable examples.

Q4. Explain construction and working of pitot static tube meter.

Q5. Explain two methods to measure velocity.

Q6. Explain functional elements of a measuring system.

SECTION-C

Q7. Explain various types of manometer, with the help of diagrams.

Q8. Discuss various electrical methods to measure the temperature.

Q9. Explain various methods to measure torque.