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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

INSTRUCTION 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 has to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students has to attempt any **TWO** questions.

SECTION-A**1. Answer briefly :**

- a) Define arithmetic mean.
- b) Define range and span of the instrument.
- c) What is the significance of calibration?
- d) What is a ramp input signal?
- e) What is meant by absolute error of measurement?
- f) Write the function of transducer.
- g) What do you mean by sensitivity of an instrument?
- h) State the law of intermediate metals in context of thermocouples.
- i) For what purpose rotameter is used?
- j) What is pyrometer?

SECTION-B

2. Describe the static and dynamic characteristics of measuring instrument.
3. What is data acquisition system? Give the block diagram arrangement of a data acquisition system and describe the function of each component.
4. Explain in brief various relative motions measuring device.
5. Discuss in brief Opto electrical transducer.
6. Discuss in brief any one non electrical method of temperature measurement.

SECTION-C

7. Write short notes on :
 - a) Electronic flow meter
 - b) Electromagnetic flow meter
 - c) Hot wire anemometer
8. Explain the construction and working of hydraulic load cell and torque transducer.
9. What do you mean by calibration and testing of pressure measuring device? Explain the construction and working of Monometers and Piezo transducer.