

Roll No. 

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (AE) (Sem.-6<sup>th</sup>)**MEASUREMENTS AND INSTRUMENTATION**

Subject Code : AE-306

Paper ID : [A0721]

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. Write briefly :**

- a) Define mean deviation.
- b) What is meant by normal distribution?
- c) What is threshold?
- d) Define sensitivity.
- e) What are systematic errors?
- f) What is active transducer?
- g) What is a hydraulic load cell?
- h) What is the function of Pitot static tube?
- i) What is a pyrometer?
- j) What is meant by bonded strain gauge?

### **SECTION-B**

2. Explain primary, secondary and tertiary measurements.
3. Explain the response of a first order when subjected to ramp input signal.
4. Differentiate between hysteresis and dead zone.
5. Explain the use of a piezometer tube to measure the intensity of pressure in a liquid.
6. Explain a thermoelectric sensor.

### **SECTION-C**

7. Explain the difference in principle of operation of a photovoltaic cell and photoconductive cell. Give the application of each cell.
8. Sketch and explain the working of a hot wire anemometer.
9. Describe the working of a pneumatic load cell for the measurement of force.