

312333

24225

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.  
(2) Answer each next main Question on a new page.  
(3) Illustrate your answer with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) Assume suitable data, if necessary.  
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. Attempt any FIVE of the following: 10
- List the types of errors in measurement.
  - Define heat and temperature.
  - Draw the construction diagram of RTD.
  - Define pressure. Give it's unit.
  - List the types of liquid level measuring methods.
  - Define modulus of elasticity and poisson's ratio.
  - State the seeback effect.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) List and explain any four state characteristics.
  - b) Describe the Bimetal thermometer with neat diagram.
  - c) Explain the working of LVDT with neat diagram.
  - d) Give the significance of anemometer and draw its figure.
- 3. Attempt any THREE of the following:** **12**
- a) Describe the direct and indirect measurement.
  - b) Explain the construction and working of hair hygrometer.
  - c) Describe pirani gauge with neat diagram.
  - d) Explain slight glass method for liquid level measurement with neat diagram.
- 4. Attempt any THREE of the following:** **12**
- a) Describe the classification of measuring instrument. (Based on function and working)
  - b) Select the instrument for high temperature measurement. Explain its working with the help of neat diagram.
  - c) Elaborate a note on potentiometer and write its two applications.
  - d) Compare RTD and thermistor. (Any four points)
  - e) Describe the principle and working of eddy current dynamometer.
- 5. Attempt any TWO of the following:** **12**
- a) Identify the temperature transducer in which following law are used and explain following laws –
    - i) Law of intermediate temperature.
    - ii) Law of intermediate metal.
  - b) Draw and explain the working of bourdon tube pressure transducer.
  - c) Name the flowmeter based upon Faraday's law and explain its working with neat diagram.

**6. Attempt any TWO of the following:****12**

- a) Draw neat sketch of rotameter and explain it's working. Give its application.
  - b) Draw bonded and unbonded strain guage and explain it.
  - c) Suggest the instrument used to measure speed of rotating screw. State working of principle of this instrument with neat diagram.
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