

312333

12425

03 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 answers 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

- Define dynamic error of an instrument.
- Enlist two instruments used for high temperature measurement.
- Enlist two instruments used for humidity measurement.
- State any four units of pressure.
- State the relation between:
 - Pa and N/m^2
 - Kg/cm^2 and psi
 - atm and kg/cm^2
 - mm Hg and Pa
- Draw neat labelled figure of Hook gauge.
- Draw stress-strain curve.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) State indicating type, recording type, registering type and transmitting type instruments.
 - b) Describe working of bimetallic thermometer with neat figure.
 - c) Explain construction and working of enlarged leg manometer.
 - d) Enlist any eight requirements of strain gauge.
- 3. Attempt any THREE of the following:** **12**
- a) Describe primary and secondary elements of measuring instrument with examples.
 - b) Explain with neat figure peltier effect.
 - c) Explain with neat figure the Bob and tape method for liquid level measurement.
 - d) Describe unbounded strain gauge with neat figure.
- 4. Attempt any THREE of the following:** **12**
- a) State the following dynamic characteristics:
 - i) Speed of response
 - ii) Dead time lag
 - b) Explain working of hair hygrometer with neat figure.
 - c) Draw neat labelled figure of Pirani gauge.
 - d) Explain with neat figure the magnetic level indicator.
 - e) Explain slipping clutch tachometer with neat figure.

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

- a) Explain pressure thermometer with neat figure.
- b) Describe LVDT with neat figure.
- c) Explain working of ultrasonic flow meter with neat figure.

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

- a) Describe working of optical pyrometer with neat figure.
 - b) Explain working of Diaphragm pressure gauge with neat figure.
 - c) Describe with neat figure the anemometer for flow measurement.
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