

22335

22223

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 answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following:** **10**
- a) Define transducer.
 - b) State different types of pressures.
 - c) State various types of variable headflow meters.
 - d) Give a classification of various indirect level measurement methods.
 - e) Define thermistor.
 - f) State applications of LVDT.
 - g) State applications of RADAR type of level transducer.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Describe with neat sketch the working principle of venturimeter.
 - b) Draw a labelled diagram and state the working principle of RVDT.
 - c) Draw a neat sketch of inclined tube manometer and explain its working principle.
 - d) “Ultrasonic method of level measurement is most suitable method for measuring flow of hazardous liquid”. Justify this statement with a neat sketch.
- 3. Attempt any THREE of the following:** **12**
- a) Draw a labelled diagram of bellows and explain its working principle.
 - b) Explain with neat sketch the radiation pyrometry technique for measuring the temperature.
 - c) Explain with a suitable diagram the working of nuclear radiation type level measurement.
 - d) Draw a neat sketch and explain the working of bimetallic thermometer.
- 4. Attempt any THREE of the following:** **12**
- a) “Capacitive type of level measurement is most suitable method for measuring level of water tank”. Justify this statement with neat sketch.
 - b) Explain with a labelled diagram the working of thermocouple.
 - c) Explain with neat sketch the working of angular potentiometer.
 - d) Explain with neat sketch the doppler doppler type of flowmeter.
 - e) Explain the working of C-type Bourdon tube with neat sketch.

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

- a) Explain with labelled diagram the working principle of LVDT. Show three core position.
- b) Explain with neat sketch the working of vapour pressure thermometer for temperature measurement. State its specifications.
- c) Explain the concept of Coriolis mass flow meter along with a neat sketch.

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

- a) Explain with labelled diagram the apparatus for calibrating air purge and capacitive system.
 - b) The flow of running water can be measured using orifice plate. Justify with neat sketch.
 - c) Explain with neat sketch the temperature calibration method.
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