

22420

12223

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) 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) State the need of transducer.
 - b) List out pressure measuring devices.
 - c) Define Reynold's number turbulent flow.
 - d) Give the classification of flow measuring transducers.
 - e) List out different types of indirect level measurement meter.
 - f) State working principle of Thermistor.
 - g) Define strain gauge. List its types.
- 2. Attempt any THREE of the following:** **12**
- a) State function of each block Instrumentation system with diagram.
 - b) Describe the construction of LVDT with neat diagram.
 - c) Explain radiation type level measurement technique.
 - d) Draw and explain Manometer U-Tube.

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- 3. Attempt any THREE of the following:** **12**
- a) Describe the criteria to be considered for selection of transducer.
 - b) Give the classification of transducer.
 - c) Draw neat diagram of Bourdon Tube pressure gauge and explain its working.
 - d) Explain the working of electromagnetic flow meter with neat diagram.
- 4. Attempt any THREE of the following:** **12**
- a) Explain the working of venturimeter type flow meter with neat diagram.
 - b) Draw neat sketches of linear and Rotary potentiometer liquid level gauge.
 - c) Describe the working principle of capacitive type level transducer.
 - d) Describe with neat labelled diagram measurement of level using hydrostatic level meter.
 - e) Describe with diagram of optical pyrometer type temperature sensor.
- 5. Attempt any TWO of the following:** **12**
- a) Explain in detail calibration technique and draw the calibration curve in general for pressure measurement.
 - b) State application and compare the advantages and disadvantages of an orifice meter and a venturimeter.
 - c) Describe the factors to be considered for selection of right type of flow meter.
- 6. Attempt any TWO of the following:** **12**
- a) List out the troubles and related remedies in capacitive type level meter.
 - b) Compare RTD, thermocouple and thermistor.
 - c) Explain see back effect and peltier effect. Give example where it is used.
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