

22335

11819

3 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (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

- (a) Define Transducer. Give two examples.
- (b) Compare Active & Passive Transducers. (Two points)
- (c) Define :
 - (i) Absolute pressure
 - (ii) Gauge pressure
- (d) State the formula for Reynold's number.
- (e) List the types of orifice plates.
- (f) List the indirect methods for Level Measurement.
- (g) Define Temperature. List different temperature scales.

2. Attempt any THREE of the following : 12

- (a) Explain the working of 'C' type Bourdon tube with neat diagram.
- (b) Compare orifice plate and venturi tube with reference to working principle, construction, maintenance and cost.
- (c) Differentiate between radiation type level measurement and capacitive type level measurement based on type of measurement, application, cost & accuracy.
- (d) Explain the working principle of Bimetallic thermometer with neat diagram.

3. Attempt any THREE of the following : 12

- (a) Explain the selection criteria for Transducers. (any four points)
- (b) Describe the working of ultrasonic flow meter with neat diagram.
- (c) Explain with the help of neat sketch float type level measurement.
- (d) Describe, the procedure to troubleshoot the faults in a thermistor circuit. (any two faults)

4. Attempt any THREE of the following : 12

- (a) Give two examples of :
 - (i) Active Transducer
 - (ii) Resistive Transducer
 - (iii) Inductive Transducer
 - (iv) Digital Transducer
- (b) Sketch constructional diagram of Inclined Manometer. State its advantages and disadvantages.
- (c) Explain the working of Coriolis's flow meter with neat diagram.
- (d) Draw the diagram of Radar level measurement. Write one advantage & disadvantage of it.
- (e) With the help of neat labelled diagram describe the operation of RTD.

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

- (a) Explain construction, working principle of LVDT with circuit diagram & show three core position.
- (b) Classify pressure measurement techniques. Describe how calibration of pressure gauge is done by using dead weight tester.
- (c) Describe the working principle along with construction of Electromagnetic type flow meter. State its two advantages & application.

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

- (a) Explain with neat sketches the working of following elastic pressure transducers :
 - (i) Bellows
 - (ii) Diaphragm
 - (iii) Capsule
 - (b) Draw and explain the diagram of capacitance level measurement with reference to
 - (i) Calibration procedure
 - (ii) Merits
 - (c) Describe working of radiation pyrometer with neat diagram. State its two applications and suitable temperature range.
-

