

313340

12526

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) Draw the block diagram of measurement system.
- b) List the types of standard of measurement.
- c) Draw the circuit diagram of 2-wire and 3-wire system.
- d) Define :–
- i) Absolute pressure
- ii) Gauge pressure
- iii) Atmospheric pressure
- iv) Vacuum.
- e) Draw the neat sketch of Bourdon tube with LVDT.
- f) List the types of flow and define them.
- g) Give classification of level measurement.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Describe the working principle of LVDT with neat diagram.
 - b) Convert :-
 - i) 77°F into °C
 - ii) 0°C into °F.
 - iii) 100°C into °k
 - iv) 212°F into °R.
 - c) Describe the working principle of U-tube manometer with neat diagram.
 - d) Describe with neat sketch working of Pitot tube.
- 3. Attempt any THREE of the following: 12**
- a) Explain the selection criteria of Transducer. (Any four points)
 - b) Explain the working principle of Bimetallic thermometer with neat diagram.
 - c) Describe the working principle of 'C' type bourdon tube with neat diagram.
 - d) Explain with neat sketch the working of Nuclear radiation type level measurement.
- 4. Attempt any THREE of the following: 12**
- a) Draw the block diagram of Digital multimeter and explain function of each block.
 - b) Compare RTD with Thermister with reference to :
 - i) Working principle
 - ii) Materials
 - iii) Operating range
 - iv) Cost.
 - c) Describe working principle of strain gauge load cell with neat diagram.
 - d) Describe with neat sketch the coriolis mass flow meter.
 - e) Explain Air purge level measurement with neat diagram.

5. Attempt any TWO of the following: 12

- a) Describe the working of Radiation pyrometer with neat diagram. State its advantages and dis-advantages.
- b) Explain with neat sketch the calibration procedure for Bourdon tube pressure gauge using Dead weight tester.
- c) Describe ultrasonic flow meter :-
 - i) Time difference type
 - ii) Doppler type.

6. Attempt any TWO of the following: 12

- a) Explain with the diagram the laws of :-
 - i) Intermediate metals
 - ii) Intermediate temperature.
 - b) Describe Nutating disc type flow measuring device with reference to :-
 - i) Construction
 - ii) Working
 - iii) Merits.
 - c) Describe calibration procedure of capacitive type level measurement system with neat diagram.
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