

22332

23124

3 Hours / 70 Marks

Seat No.

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- 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.

Marks

1. Attempt any FIVE of the following :

10

- (a) List any two electrical transducer.
- (b) List any two pressure transducer.
- (c) Define Laminor Flow.
- (d) List any two applications of RTD.
- (e) Draw block diagram of instrumentation system.
- (f) List objectives of data acquisition system.
- (g) Define absolute humidity.

2. Attempt any THREE of the following :

12

- (a) Describe briefly bounded type strain gauge.
- (b) Explain working principle of Bellows with neat diagram.
- (c) Explain with neat sketch working principle of wet-bulb thermometer.
- (d) Compare analog & digital display devices.



- 3. Attempt any THREE of the following : 12**
- (a) Define (i) Absolute pressure (ii) Atmospheric pressure (iii) Vacuum pressure (iv) Gauge pressure.
 - (b) Explain construction and working of thermocouple.
 - (c) Define temperature. Give its unit. List different temperature scales.
 - (d) Draw block diagram of data acquisition system. Explain function of each block.
- 4. Attempt any THREE of the following : 12**
- (a) Describe the procedure to calibrate pressure gauge using dead weight tester.
 - (b) Explain need of level measurement.
 - (c) Compare thermistor to RTD on any four points.
 - (d) Explain pneumatic transmission system.
 - (e) Describe working of voltage telemetry system.
- 5. Attempt any TWO of the following : 12**
- (a) With the help of neat block diagram explain LVDT.
 - (b) Compare strip chart recorder and X-Y recorder.
 - (c) Explain with neat diagram working principle of magnetic pick-up measurement technique.
- 6. Attempt any TWO of the following : 12**
- (a) List criteria for selection of sensor for industrial application.
 - (b) A Newtonian fluid having viscosity of 0.53 Ns/m^2 , specific gravity of 0.97 flows through 30 mm diameter pipe with the velocity of 2.6 m/s. Calculate Reynolds number. State type of flow based on Reynolds number.
 - (c) Explain working principle of Well-type manometer with neat diagram.
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