22332

12425

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) 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) Give two examples of Active and Passive transducer.

(b) List two advantages of elastic pressure transducer.

(c) Define Reynolds number.

(d) Draw circuit diagram of Wheatstone's bridge.

(e) State the objective of DAS.

(f) List applications of Thermistor (any two).

(g) Define Relative Humidity.

2. Attempt any THREE of the following : **12**

(a) Define transducer. Give the classification of transducer with one example each.

(b) Describe with neat sketch the working principle of LVDT.

(c) Explain Seeback effect and Peltier effect in brief.

(d) Draw and explain Hydraulic transmission in brief.

3. Attempt any THREE of the following : **12**

(a) Draw and explain construction of a C-type bourdon tube.

(b) Compare between RTD and Thermistor (any four points).

(c) Draw and explain working of Bimetallic thermometer with suitable example.

(d) Draw and explain voltage telemetry system in brief.

4. Attempt any THREE of the following : **12**

(a) Draw the figure showing relation between different pressures.

(b) Draw and explain the working principle of venturimeter.

(c) Describe the working of capacitive type Hygrometer with neat diagram.

(d) List any two advantages and disadvantages of Rotameter.

(e) Draw and explain construction of X-Y recorder in brief.

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

(a) Draw the block diagram of Instrumentation system and explain the function of each block in brief.

(b) Draw and explain the block diagram of Multichannel Data Acquisition system. Give it's two applications.

(c) (i) Compare between photo-electric pick-up and magnetic pick-up type speed measurement. **(4 marks)**

(ii) List two specific applications of ultrasonic flow meter. **(2 marks)**

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

(a) Explain the selection criteria for selecting a proper transducer for an industrial application. (any **six** points).

(b) Draw and explain liquid level measurement using ultrasonic method. Give it's two applications.

(c) Describe the procedure to calibrate pressure gauge using dead weight tester with neat sketch.
