

22407

24225

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 answers 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) Define :
 - i) Static Error
 - ii) Speed of Response
 - b) List the different control actions (Any four).
 - c) Define open loop and closed loop control system.
 - d) State the principle of thermal mass flow meter.
 - e) Draw the diagram of air to open control valve.
 - f) Define the term cavitation.
 - g) Define
 - i) Sensitivity
 - ii) Dynamic Error

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) State the Principle of Bimetallic thermometer with neat diagram.
 - b) Explain with neat sketch Metallic Diaphragm Gauge.
 - c) Describe with neat sketch the working of ultrasonic method of level measurement.
 - d) State the factors to be considered for valve selection (Any four).
- 3. Attempt any THREE of the following :** **12**
- a) List the different Temperature scale with Boiling point and Freezing point of water (any four).
 - b) Explain with neat sketch the working of C-Type Bourdon tube Pressure Gauge.
 - c) Describe with neat sketch the construction of turbine flow meter.
 - d) Describe linear and equal percentage Inherent flow characteristics of control valve with graph.
- 4. Attempt any THREE of the following :** **12**
- a) State difference between Resistance Thermometer and Thermistor (Any four).
 - b) Explain principle and working of Dead Weight Tester.
 - c) State the principle of McLeod Gauge. Draw its diagram.
 - d) State the principle of electromagnetic flow meter measurement method with neat diagram.
 - e) Explain working of solenoid valve with diagram.
- 5. Attempt any TWO of the following :** **12**
- a) Describe construction and working of radiation pyrometer with neat diagram.
 - b) Describe the construction and working of LVDT with neat diagram.
 - c) Explain in detail. Principle construction and working of piston type variable area meter.

6. Attempt any TWO of the following :

12

- a) Describe the construction and working of capacitance method of level measurement with a neat diagram.
 - b) Explain DCS architecture with the help of a block diagram.
 - c) State the function of valve actuator and valve positioner. Define rangeability and turn down.
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