

22407

21819

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) Sensitivity
 - (ii) Repeatability
 - b) List any four temperature measuring devices.
 - c) Give the names of any four pressure gauges used for pressure measurement.
 - d) State the principle of ultrasonic flow meter.
 - e) Define :
 - (i) Speed of Response
 - (ii) Time Lag.
 - f) Enlist the names of different controllers (any four names).
 - g) Write the names of different types of control valves.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Explain construction and working of Bimetallic Thermometer with neat sketch.
 - b) Describe Turbine flow meter with neat sketch.
 - c) Draw a neat diagram of McLeod gauge used in vacuum measurement.
 - d) Explain the capacitance type level measurement method with neat diagram.
- 3. Attempt any THREE of the following: 12**
- a) Explain Static Error and Dynamic Error in measurement systems.
 - b) List different electrical temperature sensors. Explain any one of them.
 - c) State the working principle of Bellows pressure gauge with neat sketch.
 - d) Describe open loop and closed loop system.
- 4. Attempt any THREE of the following: 12**
- a) Explain the working of valve actuators used in control valve.
 - b) Describe construction and working of Resistance Temperature Detector (RTD).
 - c) State the working principle of variable area flow meter (piston type).
 - d) Explain differential pressure measurement method as indirect method for level measurement.
 - e) Compare Servo and Regulatory process used in process control.

- 5. Attempt any TWO of the following: 12**
- a) Describe principle and block diagram of programmable logic controller (PLC).
 - b) Explain in detail, principle, construction and working of Thermal mass flow meter.
 - c) Describe construction and working of Dead Weight Tester used in pressure calibration.
- 6. Attempt any TWO of the following : 12**
- a) Explain in detail principle, construction and working of Radiation Pyrometer with neat sketch.
 - b) Draw a neat sketch of Solenoid valve and explain its construction and working.
 - c) Draw a neat sketch of control valve and give the names to it's different parts.
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