22407

11920

3 Hours / 70 Marks Seat No. | | | | | | | | |

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) Use of Non-programmable Electronic Pocket Calculator is permissible.

(6) 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) Drift

(ii) Sensitivity

b) Write the names of different temperature measuring instruments. (Any 4 names)

c) Enlist the names of different pressure measuring instruments. (Any 4 names)

d) Give the names of different electrical temperature measuring devices.

e) Write the names of any four flow meters used for flow measurement.

f) Write different types of controllers used in control system.

Marks

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

a) Explain the construction of Rotameter.

b) List four temperature scales and state its icepoint and boiling point of water on each scale.

c) Explain the working and principle of dead weight tester.

d) Explain with principle the instrument for air purge method of level measurement.

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

a) Draw a neat sketch of Ultrasonic flowmeter.

b) Explain the working and principle of thermal flow meter.

c) State four points of difference between open loop and closed loop control system.

d) Define dead zone of instrument and explain the reasons of dead zone.

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

a) Explain the working and principle of bi-metallic thermometer.

b) State the advantages and disadvantages of Bourdon type pressure gauge.

c) Explain the working and principle of LVDT.

d) List the classification of temperature measuring instruments with one example each.

e) Explain with neat diagram working of Mc Leod gauge used for vacuum measurement.

Marks

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

a) Explain the working and principle of electromagnetic flow meter with neat diagram.

b) Explains DCS architecture with the help of a block diagram.

c) State the factors to be considered for control valve selection.

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

a) State the function of valve actuator and valve positioner.

b) Explain with block diagram the working of programmable logic control system. (PLC).

c) Explain solenoid valve with construction and working of it.