313338

24225

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 answer 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) Sensitivity

ii) Static Error.

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

c) Define the term pressure and give the different units used for its measurement.

d) Give the application of Rotating vane meter. (Any two)

e) Draw block diagram of automatic control system.

f) List the causes of dead zone. (Any two)

g) State the principle of thermocouple.

Marks

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

a) Differentiate between direct and indirect measurement system.

b) Name the device used for measuring the temperature of moving objects. State its principle.

c) Draw the neat labelled diagram of ultrasonic flow meter.

d) Explain any one method of vacuum pressure measurement.

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

a) Write the advantages of Pyrometers over other temperature measuring devices.

b) Explain construction and working of heat transfer type thermal flow meter.

c) Differentiate between SISO and MIMO.

d) Draw block diagram of architecture of a programmable logic controller.

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

a) With neat diagram explain the working of an instrument used for calibrating pressure gauge.

b) Explain high pressure slight glass level indicator.

c) State the application of IoT in chemical industry.

d) Name the methods used for measuring level of liquid when there is no physical contact is allowed between the liquid and the instrument. Explain its working.

e) Compare open and closed loop system.

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

a) With the help of neat diagram, give principle and working of spiral bimetallic thermometer.

b) Explain piston type variable area flowmeter with neat sketch.

c) Describe the construction and working of pneumatic PI controller with neat sketch.

Marks

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

a) Explain cascade control system with neat sketch.

b) Explain construction and working of strain gauge.

c) Describe spring actuator with valve positioner and state the need of valve actuator and positioner in control valve.
