313338

12425

03 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) 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 the term:

i) Speed of response

ii) Time lag.

b) Write formula to convert:

i) °C to °F

ii) °C to °K.

c) Write any four units of pressure.

d) Enlist level measurement method used in industry. (Any four points)

e) What is the function of valve actuator in control valve?

f) Write principle of radiation pyrometer.

g) Write parts of functional elements.

Marks

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

a) What is calibration. Write procedure to calibrate any two instruments.

b) Draw neat sketch of radiation pyrometer.

c) Describe principle, construction, working with neat sketch of Air purge method.

d) Draw neat sketch of linear variable differential transformer.

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

a) Differentiate between Radiation pyrometer and Optical pyrometer.

b) Draw neat sketch of:

i) Radiation method

ii) Ultrasonic method for level measurement.

c) With a neat sketch, explain the construct and working of Distributed Control System (DCS).

d) Draw neat sketch of cascade controller.

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

a) Draw neat labelled sketch of McLeod Gauge.

b) Describe with principle, construction and working with neat sketch of Electromagnetic flow meter.

c) Differentiate between open loop and closed loop control system.

d) Draw neat labelled sketch of programmable logic controller.

e) Draw neat sketch of valve characteristics for linear, equal % and quick opening also explain application of valve positioner with neat sketch.

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

a) Describe optical pyrometer with principle, construction, working and neat sketch.

b) Write principle and draw neat sketch of Turbine flow meter.

c) Describe different types of control action.

Marks

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

a) Explain characteristics and application of IOT in chemical Engineering.

b) Explain C-Bourdon Tube pressure gauge with principle, construction, working and neat sketch.

c) Draw and explain Ratio controller.
