

Total No. of Questions : 12]

SEAT No. :

P2025

[Total No. of Pages : 3

[5059] - 630

B.E. (E&TC)

PLC'S & AUTOMATION

(2012 Pattern) (Elective - II) (End Sem.)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q.6, Q. 7 or Q. 8, Q. 9 or Q. 10, Q. 11. or Q. 12.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.
- 5) Assume suitable data, if necessary.

Q1) Draw the architecture of Automation and discuss its advantages & limitations. [8]

OR

Q2) a) Explain the impact of Automation on society. [4]

b) Explain how Automation system improve industrial profitability. [4]

Q3) A measurement of temperature using a sensor that outputs 6.5mv/°C must measure to 100°C. A 6-bit ADC with a 10V reference is used. [6]

a) Develop a circuit to interface the sensor and the ADC.

b) Find the temperature resolution.

OR

Q4) What is Linearization? Explain different approaches for linearization. [6]

P.T.O

Q5) Explain microprocessor based flow control system. [6]

OR

Q6) Explain role of servomotors in automation. [6]

Q7) a) Explain following term w.r.t. PLC [8]

- i) I/O scan mode
- ii) Execution mode
- iii) Scan time
- iv) Soft PLC.

b) Draw and explain bottle filling plant. construct Ladder diagram for the same. [10]

OR

Q8) Write a short note on [18]

- a) IEC 61131
- b) Networking of PLC
- c) RFID

Q9) a) What is SCADA. Explain the functions of Master Terminal unit in detail. [8]

b) Explain elements of DCS with block diagram. [8]

OR

Q10) a) What are the characteristics of processes make them potential candidate for SCADA? [8]

b) Explain any two specifications of DCS in detail. [8]

- Q11)a)** What are the basic components of numerical control system? Briefly discuss the function of each component. **[8]**
- b) What is field bus? Explain important features of field bus. **[8]**

OR

- Q12)a)** Discuss the advantages of employing CNC machines over manual machines. **[8]**
- b) Write a short note on Panel Engineering for automation. **[8]**

