

Total No. of Questions : 6]

SEAT No. :

**P89**

**OCT. -16/BE/Insem. - 145**

[Total No. of Pages : 2

**B.E. (Electronics & Telecommunication)**

**PLCS & AUTOMATION**

**(2012 Course) (Semester - I) (Elective - II) (404185C)**

*Time : 1Hour]*

*[Max. Marks :30*

*Instructions to the candidates:*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.*
- 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) a)** Draw and explain the block diagram of process control and following terms with example, **[6]**

- i) Process Variable.
- ii) Set point.
- iii) Measured Variable.
- iv) Manipulated variable.
- v) Control Element.

b) Explain control system evaluation criteria. **[4]**

OR

**Q2) a)** List & Explain types of Automation with example. **[6]**

b) What is the Role of Automation in Process Industry? **[4]**

**Q3) a)** What is the need of Transmitters? What are the signal transmission standards used in Process Control Systems? Which signal standard is most popular? **[5]**

b) Explain 2-wire and 3-wire transmitters in detail. **[5]**

OR

**P.T.O.**

**Q4)** a) The temperature range of 20°C to 120°C is linearly converted to the standard range of 4 to 20 mA. what current will result from 66°C? What temperature does 6.5mA represent? [5]

b) Explain Smart & Intelligent Transmitters & their features. [5]

**Q5)** a) Write a short note on analog PID controller. [6]

b) What is PAC? (Programmable Automation Controller) [4]

OR

**Q6)** a) Define actuator. How actuators are classified? Explain hydraulic actuator. [6]

b) Write a short note on VFD. [4]

