

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 49305

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Sixth Semester

Electrical and Electronics Engineering

14UEE905 – PROGRAMMABLE LOGIC CONTROLLER AND SCADA

(Regulation 2014)

Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. PLCs having less than _____ inputs and outputs are called as Small PLC.
(a) 50 (b) 200 (c) 100 (d) 150
2. To protect a PLC from any incoming surges from the field, isolated devices such as _____ are used.
(a) Transformer (b) ADC (c) Transducer (d) None of these
3. To protect a PLC from any incoming surges from field, Isolated devices such as _____ is used.
(a) Transformer (b) ADC (c) DAC (d) Transducer
4. Which of the following Relay Ladder Logic (RLL) applications is not normally performed in early automation systems?
(a) On/off control of field devices
(b) Logical control of discrete devices
(c) On/off control of motor starters
(d) Proportional control of field devices

5. A SCADA system performs Data acquisition, Networked data communication, _____ and control.
- (a) Data representation (b) Microcontroller
(c) Distributed control system (d) None of these
6. Components of a modern SCADA system are
- (a) Field devices
(b) Controllers, Remote I/O's and Distributed I/O's
(c) Human Machine Interface (HMI), SCADA Servers/Clients
(d) All above
7. Why does SCADA software can communicate with many kinds of PLC's?
- (a) SCADA software flexibility contents many device drivers
(b) SCADA software fixes many device drivers
(c) SCADA software supports popular PLC drivers
(d) SCADA software supports popular field devices
8. A _____ consists of number of mini computers or microcomputers interconnected in a tree structure.
- (a) Shared bus system (b) Ring system
(c) Hierarchical system (d) None of these
9. In process control the basic objective is to _____ the value of some quantity.
- (a) Regulate (b) Process
(c) Both (a) and (b) (d) None of these
10. In industrial process control a _____ is a telemetry device which converts measurements from a sensor in to a signal and sends it to a control device located a distance away.
- (a) Transducer (b) Sensor
(c) Transmitter (d) Controller

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. List the important considerations of program scanning rate and sequence in PLC and their effects on system operation. Discuss basic input ON/OFF switching systems. Describe the operation of various types of input devices such as pushbuttons, switches, selector switches and limit switches. (8)

12. Explain input analog devices of PLC operation. (8)
 13. Define and explain with block diagram of SCADA. (8)
 14. Explain why communication equipment's are important in Distribution Automation system using IEC 61850 and draw the simplest SCADA configuration employing a single computer. (8)
 15. Explain the PLC based speed control applications. (8)
-