

B.E DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2009)

Seventh Semester

ELECTRONICS AND INSTRUMENTATION ENGINEERING

EIE115: Logic and Distributed Control System

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. _____ is a standalone unit and would not be used for communicating with other computers or PLC.
 - a) Multi – ended PLC
 - b) Medium size PLC
 - c) Control management PLC
 - d) Single – ended PLC
2. The memory capacity of large PLC is _____.
 - a) 2KB
 - b) 32KB
 - c) 2MB
 - d) 100MB
3. Read Only Memories are _____.
 - a) Volatile
 - b) Non-volatile
 - c) alterable
 - d) erasable
4. If a solid-state devices controls current from the load, it is known as _____.
 - a) Fixed PLC
 - b) Modular PLC
 - c) Sinking Device Circuit
 - d) Sourcing Device Circuit
5. _____ is a program instruction unit that, when executed yields one or more output values.
 - a) Instruction List
 - b) Sequential function chart
 - c) Ladder diagram
 - d) Functional Block Diagram
6. Structured Text is a programming language that strongly resembles _____.
 - a) Pascal
 - b) Data oriented language
 - c) Esoteric
 - d) XML based language
7. _____ is the smallest collection of hardware in the system that can do closed loop control.

23. a) Explain different types of timer with suitable examples.

(OR)

b) Draw PLC Ladder program to perform the following sequence of operation for an elevator system.

a. When the START button is pressed, the platform is driven to the down position.

b. When the STOP button is pressed, the platform is halted at whatever position it occupies at that time.

c. When UP button is button is pressed, the platform if it is not in DOWN motion is driven to the UP position.

d. When DOWN button is button is pressed, the platform if it is not in UP motion is driven to the DOWN position.

Use NC limit switches for sensing the position, Motor for UP and DOWN motion and Four NO push buttons for START,STOP,UP and DOWN.

24. a) Explain the architecture of Distributed Control System in detail.

(OR)

b) Explain in detail about High Level and Low Level Engineering Interface in DCS.

25. a) Explain the architecture and topologies used in field bus communication.

(OR)

b) Describe the modes, message format and features of HART protocol.
