



C14-AEI-602

**4706**

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**OCT/NOV—2017**  
**DAEIE—SIXTH SEMESTER EXAMINATION**  
**INDUSTRIAL AUTOMATION**

*Time* : 3 hours ]

[ *Total Marks* : 80

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**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Draw the block diagram of PLC.
2. List different types of PLC.
3. State the rules to follow in drawing ladder diagram.
4. Write the ladder diagram for retentive time.
5. Write the counter-up ladder diagram of a PLC.
6. List the specifications of data logger.
7. State the role of computers in process control.
8. Define robot.

\* 9. List three main components of SCADA.

10. List the commonly used processors in embedded system.

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Compare between relay-based and PLC-based control panels.

12. Explain the interfacing of PLC with PC.

13. Explain the ladder diagrams on comparison instructions.

14. Explain the ladder diagram for conveyer belt.

15. Explain the block diagram of Direct Digital Control Systems.

16. Explain the CNC machine with diagram.

17. (a) Explain the remote terminal unit of SCADA. 7

(b) List the applications of SCADA. 3

\* 18. Explain the hardware and software architectures of embedded systems.

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