C14–AEI–**602**

4706

BOARD DIPLOMA EXAMINATION, (C–14)
MARCH/APRIL—2018
DAEIE—SIXTH SEMESTER EXAMINATION

INDUSTRIAL AUTOMATION

Time : 3 hours] [*Total Marks* : 80

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. Define programmable logic controller.

2. List different types of PLC's based on I/O's.

3. Draw the ladder diagrams for AND and OR gates.

4. List any three applications of PLC.

5. Mention different types of timer instructions.

6. List any three applications of SCADA.

7. Define a robot.

8. List any three applications of data logger.

9. Draw the block diagram of direct digital control system.

10. List the components of embedded system.

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PART—B 10×5=50

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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. *(a)* Compare relay based and PLC based control panel in any six aspects. 6

(b) Draw the block diagram of PLC. 4

12. Explain how PLC can be interfaced with PC.

13. *(a)* State the rules to follow in drawing ladder diagram. 4

(b) Draw the ladder program of DOL starter. 6

14. Draw and explain the ladder diagram of conveyer belt control.

15. *(a)* Explain the hardware architecture of SCADA. 5

(b) Explain master station of SCADA. 5

16. Explain the block diagram of data acquisition system.

17. *(a)* Explain the role of computers in process control. 6

(b) List the applications of CNC machine. 4

18. Explain about serial communication using USB/CAN bus.

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