



C16-AEI-504

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BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DAEI - FIFTH 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. List any three manufacturers of PLC.
2. Define programmable logic controller (PLC).
3. Mention any three types of PLC programming.
4. Mention any three rules to follow in drawing ladder diagram.
5. Draw ladder diagram for OR and NAND gates.
6. List the three components of a SCADA.
7. List any three applications of data logger.
8. Define a robot.
9. State the role of computers in process control.
10. List any three components of embedded systems.

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PART—B

10×5=50

- Instructions :** (1) Answer **five** questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) Explain the concept of relay based control panel.
(b) Distinguish relay based and PLC based control panel.
- 12.** Draw and explain the block diagram of PLC.
- 13.** Draw and explain the ladder diagram for STAR-DELTA starter.
- 14.** Draw and explain the ladder diagrams for level controller.
- 15.** Explain communication infrastructure of SCADA.
- 16.** Explain the block diagram of direct digital control system with neat sketch.
- 17.** Explain the block diagram of CNC machine with neat sketch.
- 18.** Explain about serial communication using USB bus.

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