



C09-AEI-604

3717

BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2013
DAEI—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. State the different stages of PLC operational cycle.
2. List the components of PLC based control panel.
3. Draw the diagram of a PLC output module.
4. List the control elements used in automation.
5. Classify fiber-optic sensors.
6. Draw the hardware architecture of SCADA.
7. State the merits of SCADA.
8. Draw the block diagram of DDC.

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9. Draw the block diagram of data logger.
10. Define the robot.

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. Explain briefly about timer instructions used in PLC programming. 10
12. Draw the PLC ladder diagram for forward and reverse rotation of induction motor and explain its working. 10
13. (a) Explain briefly about relay based control panel. 5
(b) Write a short note on graphical display editor used in SCADA. 5
14. Explain briefly about the components of SCADA system. 10
15. Write short notes on the following :
(a) Pneumatic switches 5
(b) Colour sensors 5
16. Explain briefly about the communication standard protocols RS-232, RS-485. 10
17. Draw and explain the block diagram of data acquisition system (DAS). 10
18. Explain the operation of simple robot. 10
