G 828 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

Eighth Semester

Branch : Applied Electronics and Instrumentation Engineering

COMPUTERISED PROCESS CONTROL (A)

(Old Scheme—Supplementary/Mercy Chance)

[Prior to 2010 Admissions]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 4 *marks.*

1. What are the differences between combinational and sequential logic functions ?
2. What are the applications of programmable logic devices ?
3. Explain how we can design logic controller from programmable logic devices ?
4. Comment on commercially available PLCs.
5. Explain data highway design in DCS.
6. What you meant by field bus ?
7. What are the advantages of integrating computers and PLCs with DCS system ?
8. With diagram explain optical link components.
9. What are the different sources of noises in process control ?
10. Explain how proper wiring reduces noise in instrumentation system.

(10 × 4 = 40 marks)

Part B

Answer **all** *questions.*
Each question carries 12 *marks.*

11. Given the following four functions :

    (a) $W(A, B, C, D) = \Sigma (2, 12, 13)$

    (b) $X(A, B, C, C) = \Sigma (7, 8, 9, 10, 11, 12, 13, 14, 15)$

    (c) $Y(A, B, C, D) = \Sigma (0, 2, 3, 4, 5, 6, 7, 8, 10, 11, 15)$

    (d) $Z(A , B, C, D) = \Sigma (1, 2, 8, 12, 13)$

    Implement the combinational functions using a PAL system.

Or

12. Explain how the programmable logic devices are classified with examples and diagram.

Turn over

13. With block diagram explain a Programmable Logic Controller.

Or

14. Explain with examples a combinational logic controller and a sequential logic controller.

15. Explain about the general and computer symbols in DCS system.

Or

16. Explain in detail the multiplexer and multiplexer design in DCS system.

17. Explain how fiber optic links are adapted to MAP protocol.

Or

18. Explain the generic features of a DCS system.

19. What are the wiring rules to be followed in installing low level signal circuits.

Or

20. Explain about the operator interfacing systems in Distributed Control system.

(5 × 12 = 60 marks)