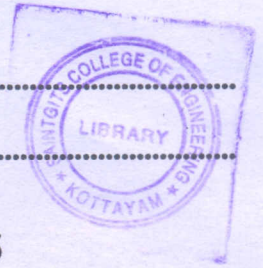


G 1046

(Pages : 2)

Reg. No.....

Name.....



B.TECH. DEGREE EXAMINATION, MAY 2015

Seventh Semester

Branch : Applied Electronics and Instrumentation Engineering / Electronics and Instrumentation Engineering

AI 010 702 / EI 010 702 – COMPUTERISED PROCESS CONTROL (AI, EI)

(New Scheme – 2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Draw block diagram of a computer control system.
2. Explain the concept of redundancy in PLCs.
3. What do you mean by dead beat algorithm?
4. How do you define multiplexer?
5. List elements of process safety management.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Briefly explain need of computers in control system.
7. Write a short note on PLC with block diagram.
8. Explain design of control algorithm using Z transforms.
9. Distinguish Centralized and De-centralized control system.
10. Write about electrostatic instrument shielding.

(5 × 5 = 25 marks)

Turn over

**Part C**

Answer all questions.

Each question carries 12 marks.

11. (a) With sketch, explain multi-channel data acquisition system.

Or

- (b) List the hardware requirements for SCADA system. Explain each of them.

12. (a) Draw a ladder diagram for a three motor system having the following conditions :

Motor 1 starts (M1) as soon as the start switch is on, after 10 seconds M1 goes OFF and Motor 2 (M2) starts. After 5 seconds M2 goes OFF and Motor 3 (M3) starts. After 10 seconds M3 goes OFF and MI starts and cycles is repeated.

Or

- (b) Explain the procedure of PLC Installation and Testing.

13. (a) With block diagram, explain sampled data system for dahlen design.

Or

- (b) Describe digital PID algorithms.

14. (a) Describe the interfacing between PLC and SCADA with diagram.

Or

- (b) Briefly explain DCS configuration with associated accessories.

15. (a) Explain the following terms :

(i) Process safety management.

(ii) Process hazard analysis.

Or

- (b) Write a note on NEMA standards.

(5 × 12 = 60 marks)