

2.13 40104 PROGRAMMABLE LOGIC CONTROLLERS

UNIT-1 PLC BASICS:

- 1.1 PLC system, I/O modules and interfacing,
- 1.2 CPU processor, programming Equipment, programming formats,
- 1.3 Construction of PLC ladder diagrams,
- 1.4 Devices connected to I/O modules.

UNIT-2 PLC PROGRAMMING:

- 2.1 Input instructions, outputs,
- 2.2 Operational procedures, programming examples using contacts and coils.
- 2.3 Drill press operation.

UNIT-3 DIGITAL LOGIC GATES,

- 3.1 Programming in the Boolean algebra system,
- 3.2 Conversion examples Ladder Diagrams for process control
- 3.3 Ladder diagrams & sequence listings,
- 3.4 ladder diagram construction and flowchart for spray process system.

UNIT-4 PLC REGISTERS:

- 4.1 Characteristics of Registers,
- 4.2 Module addressing, holding registers,
- 4.3 Input Registers,
- 4.4 Output Registers.

UNIT-5 PLC FUNCTIONS:

- 5.1 Timer functions & Industrial applications, counters,
- 5.2 Counter function industrial applications,
- 5.3 Arithmetic functions,
- 5.4 Number comparison functions,
- 5.5 Number conversion functions

UNIT-6 DATA HANDLING FUNCTIONS:

- 6.1 SKIP, Master control Relay,
- 6.2 Jump, Move, FIFO, FAL, ONS, CLR & Sweep functions and their applications

UNIT-7 BIT PATTERN AND CHANGING

- 7.1 A bit shift register, sequence functions and applications,
- 7.2 Controlling of two-axis & three axis Robots with PLC, Matrix functions.

UNIT-8 ANALOG PLC OPERATION:

- 8.1 Analog modules & systems,
- 8.2 Analog signal processing,

8.3 Multi bit Data Processing,

8.4 Analog output Application Examples,

8.4 PID principles, position indicator with PID control, PID Modules, PID tuning, PID functions.

Reference Books:

1. Programmable Logic Controllers- Principles and Applications by John W. Webb & Ronald A. Reiss, Fifth Edition, PHI

2. Programmable Logic Controllers- Programming Method and Applications – JR.Hackworth &F.D Hackworth Jr. –Pearson, 2004

