

2.13 40104 PROGRAMMABLE LOGIC CONTROLLER

UNIT-1 PLC BASICS:

PLC system, I/O modules and interfacing, CPU processor, programming Equipment, programming formats, construction of PLC ladder diagrams, Devices connected to I/O modules.

UNIT-2 PLC PROGRAMMING:

Input instructions, outputs, operational procedures, programming examples using contacts and coils. Drill press operation.

UNIT-3 DIGITAL LOGIC GATES, PROGRAMMING IN THE BOOLEAN ALGEBRA SYSTEM, CONVERSION EXAMPLES LADDER DIAGRAMS FOR PROCESS CONTROL:

Ladder diagrams & sequence listings, ladder diagram construction and flowchart for spray process system.

UNIT-4 PLC REGISTERS:

Characteristics of Registers, module addressing, holding registers, Input Registers, Output Registers.

UNIT-5 PLC FUNCTIONS:

Timer functions & Industrial applications, counters, counter function industrial applications, Arithmetic functions, Number comparison functions, number conversion functions

UNIT-6 DATA HANDLING FUNCTIONS:

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

UNIT-7 BIT PATTERN AND CHANGING:

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

UNIT-8 ANALOG PLC OPERATION:

Analog modules & systems, Analog signal processing, Multi bit Data Processing, Analog output Application Examples, 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