

Siemens S7-200 SMART Syllabus

Theory Syllabus

- Siemens PLC Introduction
- S7 200 Specification
- Number Systems
- Sensors & Actuators
- Analog I/P and O/P
- Ladder Logic
- Functional Block Diagram
- PPI Interface

Siemens Hardware Description

- Product Overview
- S-200 SMART CPU
- General Specification & Features of CPU
- Memory ranges & Features
- Expansion Modules & Signal Boards
- Communication options
- Configuring CPU for communication
- Setting up communication with CPU

Practical Syllabus

- Siemens PLC S7-200 Hardware Introduction
- Software Introduction for SIMATIC Step 7 Microwin SMART
- PLC Device Configuration
- PLC Operation
- Programming basics
- Monitoring Logic & program flow
- Creating & using function blocks
- Ladder program Editors

1 Bit logic

- 1.1 Standard inputs
- 1.2 Immediate inputs
- 1.3 Logic stack overview
- 1.4 STL logic stack instructions
- 1.5 NOT
- 1.6 Positive and negative transition detectors
- 1.7 Coils: output and output immediate instructions
- 1.8 Set, reset, set immediate, and reset immediate functions
- 1.9 Set and reset dominant bistable

NOP (No operation) instruction

- 1.1 Introduction to Boolean algebra
- 1.11 Bit logic input examples
- 1.12 Bit logic output examples

2 Timers

- 2.1 Basic Timers
- 2.2 Interval Timer
- 2.3 Clock

3 Compare

- 3.1 Compare number values
- 3.2 Compare character strings

4 Convert

- 4.1 Standard conversion instructions
- 4.2 ASCII character array conversion
- 4.3 Number value to ASCII string conversion
- 4.4 ASCII sub-string to number value conversion
- 4.5 Encode and decode

5 Counters

- 5.1 Basic Counters
- 5.2 High Speed Counter

6 Math

- 6.1 Add, subtract, multiply, and divide
Multiply integers to double integer and divide integer with remainder
- 6.2 remainder
- 6.3 Increment and decrement

7 Move

- 7.1 Move byte, word, double word, or real
- 7.2 Block move
- 7.3 Swap bytes
- 7.4 Move byte immediate (read and write)

8 Logical operations(Functional block diagram)

- 8.1 Invert
- 8.2 AND, OR, and exclusive OR

9 Shift and rotate

- 9.1 Shift and rotate instruction
- 9.2 Shift register bit