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5thSem / Branch : Automation & Robotics

Sub.: PLC & SCADA

Time : 3Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 P in PLC stands for : (CO1)

a) Permanent b) Preventive

c) Permeable d) Programmable

Q.2 The octal representation of 101 110 111: (CO2)

a) 456 b) 567

c) 123 d) 678

Q.3 All three inputs of a OR gate are 0. Its output will be: (CO2)

a) 0 b) Floating

c) 1 d) Either 0 or 1

Q.4 Which file in the PLC memory can store data in single binary format: (CO3)

a) Integer b) Bit

c) Float d) Byte

Q.24 What is PLC? Explain its working with the help of block diagram? (CO1)

Q.25 Design a traffic control system using various PLC instructions, and provide a step by step explanation of its operation? (CO4)

Q.5 Which of the following is not a part of PLC operation: (CO1)

a) Input Scan b) Process Scan

c) Environment Scan d) Output Scan

Q.6 Hexadecimal is _____ base number system: (CO2)

a) 8 b) 16

c) E d) A

SECTION-B

Note: Objective/Completiontype questions. All questions are compulsory. (6x1=6)

Q.7 Expand SCADA? (CO5)

Q.8 What is the significance of a tag in a SCADA system? (CO5)

Q.9 Define reset instruction of PLC? (CO4)

Q.10 Draw a ladder logic diagram for the NOT logic operation? (CO2)

Q.11 Provide one real-world application of PLC? (CO1)

Q.12 List two PLC manufacturers? (CO1)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain timer instructions in PLC using suitable example? (CO4)

Q.14 Describe the PLC file structure in detail? (CO3)

Q.15 List different programming language of PLC? Explain any one with suitable example? (CO1)

Q.16 Convert the hexadecimal number $(IF2596)_{16}$ into its octal equivalent? (CO2)

Q.17 Discuss the use of Labels and Sliders in a SCADA system? (CO5)

Q.18 Explain one technique of convert given octal number into decimal number? (CO2)

Q.19 List four merits and demerits of electromagnetic relay? (CO1)

Q.20 A switch is attached at 1:1/1 in a PLC. Write a ladder logic program to count the number of times the switch is pressed? (CO4)

Q.21 List five applications of SCADA? (CO5)

Q.22 Which gate (s) are called universal gate? Explain with truth table? (CO2)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Discuss the importance of alarming and data logging in a SCADA system using suitable application and advantages of using them? (CO5)