

- Q.26 Write short note on PLC application in washing machine. (CO3)

Q.27 Discuss the role of SCADA in industry. (CO3)

Q.28 Explain the concept of wireless gateways. (CO5)

Q.29 Draw the ladder logic diagram for OR gate, AND gate. (CO2)

Q.30 With example, explain the Up and down counter instructions. (CO2)

Q.31 Write down the comparison of PLC Vs. personal computer control (CO2)

Q.32 Differentiate between RAM and ROM. (CO2)

Q.33 Explain various SCADA system hardware. (CO3)

Q.34 Write short note on HART. (CO5)

Q.35 Write down ten applications of DCS. (CO4)

SECTION-D

Note: Long answer questions. Attempt any two questions out of three Questions. (2x10=20)

- Q.36 With the help of block diagram, explain the function of different blocks of PLC. (CO2)

Q.37 What is SCADA system? Explain the implementation of a SCADA system in smart city. (CO3)

Q.38 Explain different timer instructions with the help of an example. (CO2)

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**6th Sem.
Branch : Mechatronics
Sub. : Industrial Automation**

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

- Q.1 Which of the following are the components of process automation? (CO1)

 - a) Sensors
 - b) Controllers
 - c) Actuators
 - d) All the above

Q.2 SCADA stands for _____. (CO3)

 - a) Supervisory control and data acquistion system
 - b) Superior control and data acquisition system
 - c) Supervisory control and data appear system
 - d) None of the above

Q.3 PLC control the output devices on the basis of (CO2)

 - a) Status of I/P devices
 - b) User define program
 - c) Model Number of PLC
 - d) Both A & B

Q.4 Which of the following can be an input that is given to the PLC? (CO2)

 - a) Manual Switches
 - b) Relays
 - c) Sensors
 - d) None of these

- Q.5 The PLC is used in _____. (CO2)

 - a) Machine tools
 - b) Automated assembly equipment
 - c) Molding & extrusion machines
 - d) All of the above

Q.6 Which of the following is not required when creating or changing of a PLC program?

 - a) PL
 - b) Programming device
 - c) Programming software
 - d) Printer

Q.7 Which of the following are the application of modern DCS? (CO3)

 - a) Wireless systems and their protocols
 - b) Mobile interfaces
 - c) Embedded webservers
 - d) All the above

Q.8 Which of the following is a machine language?

 - a) 10AB
 - b) 10111
 - c) Add5
 - d) AX or B

Q.9 EQU, LES, LEQ instructions are examples of which of the following instructions? (CO2)

 - a) Comparison instructions
 - b) Sequencer Instructions
 - c) Data handling instructions
 - d) Composite instructions

Q.10 _____ handle mathematical operations necessary to deliver the output signal. (CO4)

 - a) Small sensors
 - b) Mat sensors
 - c) Soft sensors
 - d) Super sensors

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Ladder logic is being developed to mimic _____ logic. (CO1)

Q.12 Define scan cycle. (CO2)

.Q.13 _____ instruction will allow a line to be true for only one scan. (CO2)

Q.14 Draw instruction symbol of EQU instruction. (CO2)

Q.15 What is retentive timer? (CO2)

Q.16 Expand EEPROM. (CO1)

Q.17 SCADA focus on _____ level. (CO3)

Q.18 What is counter. (CO1)

Q.19 Define Gateway. (CO4)

Q.20 Define Ethernet . (CO4)

SECTION-C

Note: Short answer type Questions. Attempt any twelve questions out of fifteen Questions. (12x5=60)

- Q.21 What is contactor? Explain the construction and working of contractor. (CO1)

Q.22 Differentiate between relay and switch. (CO2)

Q.23 Explain the input-output module of PLC. (CO2)

Q.24 Explain PLC scanning process in brief. (CO2)

Q.25 Draw ladder diagram to start / stop a fan regulator using single push switch. Green lamp will glow when fan is on and red lamp will glow when fan is off. (CO2)