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6th Sem / Electronics and Communication

Subject:-Industrial Automation.

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 _____of PLCs can be done in very little time.(CO1)

a) Programming b) Installation

c) Commissioning d) All of the above

Q.2 The PLCs were originally designed to replace.(CO1)

a) Analog controller b) DCS

c) Microcomputers d) Hardwired control

Q.3 The difference between online and offline programming PLC is _____. (CO2)

a) Whether the PLC is running or stopped

b) Whether the programming PC has internet connectivity

c) The types of programming cable used

d) Where the edited program resides

Q.4 What is the largest integer number that a PLC counter function can reach if it uses a 16-bit register? (CO4)

a) 32,768 b) 65,535

c) 65,536 d) 65,537

Q.5 Input/output modules of PLC consist of. (CO3)

a) Discrete b) Analog

c) Register d) All of the above

Q.6 Ladder logic programming consists primarily of : (CO3)

a) Virtual - relay contacts and coils

b) Logic gate symbols with connecting lines

c) Functions blocks with connecting lines

d) Text-based code

Q.7 The _____is moved toward the relay electromagnet when the relay is on . (CO3)

a) Armature b) Coil

c) No contact d) NC contact

Q.8 Input/output modulus of PLC consists of. (CO3)

a) Discrete b) Analog

c) Register d) All of the above

Q.9 The PLC is used in _____. (CO2)

a) Machine tools

b) Automated assembly equipment

c) Molding and extrusion machines

d) All of the above

Q.10 What is the main function of the CPU in a PLC ? (CO6)

a) To provide power to the PLC

b) To store the program

c) To execute the program and control the input and output devices

d) To communicate with other PLCs

SECTION-B

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

Q.11 What is RTC? (CO6)

Q.12 Expand EPROM. (CO1)

Q.13 Expand RAM? (CO1)

Q.14 What is retentive timer? (CO2)

Q.15 What is watch dog timer ? (CO1)

Q.16 There are _____ type of timers in PLC (CO3)

Q.17 Give two manufactures of PLC. (CO3)

Q.18 The symbol of XIC? (CO1)

Q.19 What is scan time of a PLC ? (CO1)

Q.20 _____is an electromagnetic switch. (CO1)

SECTION-C

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

Q.21 Explain comparison instruction of PLC like equal not equal, greater ,greater than equal to. (CO3)

Q.22 Explain briefly concept of DCS. (CO5)

Q.23 Discuss SCADA system in industry (CO6)

Q.24 Explain timer and counter instructions of PLC (CO3)

Q.25 Explain real time clock function. (CO3)

Q.26 Discuss relative merits & demerits of PLC & DCS. (CO2)

Q.27 Explain the methods of speed control of motor. (CO7)

Q.28 Difference between DCS and SCADA. (CO6)

Q.29 Explain the different programming languages of PLC (CO4)

Q.30 Discuss relative merits & demerits of PLC & DCS. (CO2)

Q.31 Difference between open architecture and dedicated system. (CO6)

Q.32 Write short not on memory structure of PLC. (CO2)

Q.33 Explain SCADA with suitable diagram. (CO6)

Q.34 What are the advantages of PLC over electromagnetic relays? (CO1)

Q.35 Discuss importance of local area network for DCS. (CO3)

SECTION-D

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

Q.36 Draw block diagram of plc and explain function of each block in detail. (CO2)

Q.37 Write short note on : (CO3)

a) Basic instruction of timer in PLC

b) Memory Structure of PLC

Q.38 What is automation? Explain generalized automation production system and Their classification. (CO1)