

- Q.27 Discuss the various information display using DCS for efficient monitoring of plant parameters.
- Q.28 What are various Wi-Fi enabled devices? How to they work?
- Q.29 Explain the working of mod-bus.
- Q.30 Write short note on wireless thum.
- Q.31 List any four comparison instructions.
- Q.32 Explain SPC, MTU and RLC.
- Q.33 Explain ASI bus.
- Q.34 Select device that can be used with PLC to control the speed of AC motor. Explain how?
- Q.35 Differentiate between DCS and SCADA.

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Draw simple block diagram and Architecture of PLC. Explain function and working of at least 5 components.
- Q.37 Develop a ladder program for Ketchup bottling plant system with following conditions:
- Red light sensor for presence of bottle ON for 30 sec.
 - Filling green switch light ON for 25 sec, and
 - Yellow light movement switch on for 55 sec.
 - Repeat the sequence until stop push button is pressed.
- Q.38 Discuss the construction, working and application of a contractor.

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6th Sem / Branch : Mechtronics Sub.: Industrial Automation

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 Which of the following is not a part of SCADA system?
- Database server
 - I/O system
 - Sparger controller
 - PLC controller
- Q.2 RTU is a part of _____
- SCADA
 - DCS
 - DDC
 - PLC
- Q.3 GUI and SCADA is used for _____ process of managing supervisory
- Low level
 - High level
 - Equal
 - None of the above
- Q.4 Which of the following components of supervisory control and data acquisition system?
- Computer
 - Network data
 - Graphical user interface
 - All of the above
- Q.5 Ladder diagram is _____
- Diagram of PLC
 - Program of PLC
 - Diagram of SCADA
 - Diagram of DCS

- Q.6 Which of the following is the function of DCS?
- In any processor functionality fails to work, it does not affect another process
 - If any processor functionality fails to work, it does affect another process
 - If any processor functionality fails to work, it affect another process based on the environment
 - None of the above
- Q.7 In HART protocol, digital data superimposed on analog data. The peak to peak level of superimposed signal is _____
- 1 mA
 - 2 mA
 - 0.5 mA
 - 4 mA
- Q.8 In case of DCS audit trails is possible, it means
- Alarm logging
 - Record of what changes are done in system and by whom
 - Parameter logging
 - Consolidation of alarm
- Q.9 Which of the following is the application area of PLC
- Petrochemical
 - Power generation
 - Chemical batching
 - All of above mentioned
- Q.10 Which of the following allows faster machine checkout?
- Hardware controller
 - Machine controller
 - Programmable controller
 - PCB controller

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SECTION-B

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

- Q.11 I/O scan mode in PLCs consist of _____.
- Q.12 In SCADA system how many control systems are there?
- Q.13 What device sends and receives signal in wireless communication _____
- Q.14 The working of a device without human intervention is known as _____
- Q.15 Most of the wireless systems operate at _____ Hz (800/80)
- Q.16 The Industries used _____ before the PLC. Invention.
- Q.17 A coil in PLC is used for _____
- Q.18 Expand SCADA.
- Q.19 Rung is a part of this device _____
- Q.20 Draw format of instructions wrt to PLC-Down Counter.

SECTION-C

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

- Q.21 Explain the sensor bus communication.
- Q.22 Compare Fixed and Modular PLC.
- Q.23 Write short note on Ethernet devices.
- Q.24 List different editors used in SCADA.
- Q.25 Give addressing format for me I/P and O/P in PLC.
- Q.26 Write a PLC ladder program for 24 hour time clock switching a relay per hour.

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