



قائمة الاسئلة

تحكم صناعي- كلية الهندسة - قسم الكهرباء- المستوى الرابع - قوى والات- ثلاث ساعات - درجة هذا الاختبار (40)

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1) The off-delay timer (TOF) starts timing when the timer's:

- a) ladder rung switches from false to true.
- b) ladder rung switches from true to false.
- c) accumulated value equals its preset value
- d) accumulated is greater than its preset value

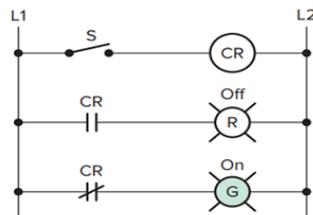
- 1) - a
- 2) + b
- 3) - c
- 4) - d

2) The status bit of switches and pushbuttons connected to a PLC are stored in the:

- a) output image table file.
- b) all of the answers
- c) user program.
- d) input image table file.

- 1) - a
- 2) - b
- 3) - c
- 4) + d

3) In the hardwired relay control circuit shown, when the switch is closed, CR coil is:



- a) energized, the red light is off, and the green light is on.
- b) de-energized, the red light is off, and the green light is on.
- c) energized, the red light is on, and the green light is off.
- d) energized, and the red and green lights are both on.

- 1) - a
- 2) - b
- 3) + c
- 4) - d

4)



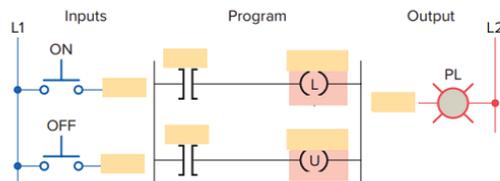


An actuator is a device that:

- a) changes AC to DC.
- b) converts mechanical movement into an electrical signal.
- c) converts an electrical signal into mechanical movement.
- d) changes DC to AC.

- 1) - a
- 2) - b
- 3) + c
- 4) - d

5) For the programmed latching operation shown, which two instructions must have the same address?



- a) ON and OFF inputs.
- b) ON input and latch output.
- c) OFF input and unlatch output.
- d) latch and unlatch outputs.

- 1) - a
- 2) - b
- 3) - c
- 4) + d

6) The two types of patterns used to accomplish the scan function are:

- a) up and down.
- b) horizontal and vertical.
- c) input and output.
- d) left and right.

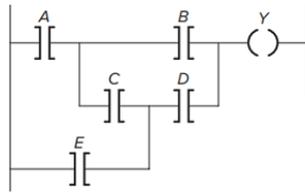
- 1) - a
- 2) + b
- 3) - c
- 4) - d

7)





The Boolean equation for the logic represented in the ladder diagram can be expressed as:



- a) $Y = (AB) + (ACD) + (DE)$
- b) $Y = (AB) + (CD) + E$
- c) $Y = (AB) + (AC) + (AD) + (ED)$
- d) $Y = (AB) + (ACD) + (DE) + (BCE)$

- 1) - a
- 2) - b
- 3) - c
- 4) d

8) What is the purpose of the Battery Backup in a PLC?

- a) To Store User Programs
- b) To Provide Emergency Power During a Power Loss
- c) To Convert Signals
- d) To Connect Network Devices

- 1) - a
- 2) b
- 3) - c
- 4) - d

9) How does the Rack or Chassis in a PLC system function?

- a) Translates Network Protocols.
- b) Executes Control Programs.
- c) Provides Safety Measures.
- d) Houses and Connects Various Modules.

- 1) - a
- 2) - b
- 3) - c
- 4) d

10) Identify an example of a device that can be controlled by a discrete output from a PLC.

- a) Motor Starter.
- b) Pushbutton.
- c) Limit Switch.
- d) All of the options.



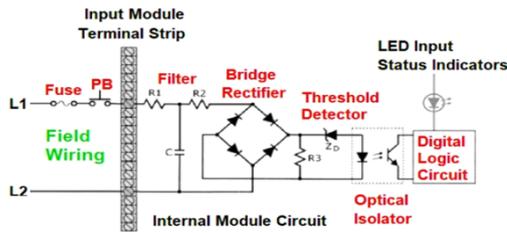


- 1) a
- 2) b
- 3) c
- 4) d
- 11) Which one is the example of a device that could be used to provide a discrete input to a PLC?
- a) Selector Switch
- b) Pushbutton.
- c) Limit Switch.
- d) All of the options.
- 1) a
- 2) b
- 3) c
- 4) d
- 12) . What is the most common form of memory used to store, back up, or transfer PLC programs?
- a) RAM.
- b) Flash EEPROM.
- c) EEPROM.
- d) Both Flash EEPROM and EEPROM.
- 1) a
- 2) b
- 3) c
- 4) d
- 13) What does the I/O system in a PLC provide an interface between?
- a) Input modules and output modules.
- b) The CPU and field equipment.
- c) The CPU and I/O rack.
- d) The I/O rack and I/O modules.
- 1) a
- 2) b
- 3) c
- 4) d
- 14)





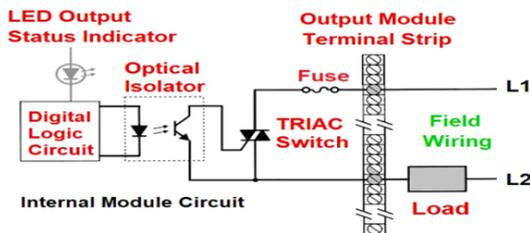
What is the purpose of the zener diode (ZD) in the schematic diagram?



- Assist in diagnosing faults.
- Define the minimum detectable voltage level.
- Provide protection against electrical noise interference.
- Segregate logic circuits from higher line voltage.

- a
- + b
- c
- d

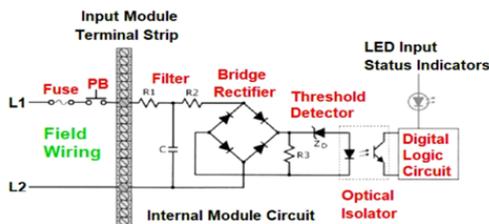
15) Where does the input signal to the module originate from?



- The input field device.
- The output field device.
- Internal logic circuitry of the processor.
- Either the input field device or output field device.

- a
- b
- + c
- d

16) What is the purpose of the LED indicator in the schematic diagram?



- Aid in the process of fault diagnosis.
- Set a minimum level for voltage detection.
- Shield against interference from electrical noise.
- Separate the logic circuits from the higher line voltage.

- + a
- b
- c





4) - d

17) What determines the different sizes of the PLC chassis?

- a) Size of the program.
- b) Number of slots it contains.
- c) Type of I/O modules used.
- d) All of the options.

1) - a

2) - b

3) + c

4) - d

18) What are the typical variances for analog inputs and outputs?

- a) 0 to 20 mA.
- b) 4 to 20 mA.
- c) 0 to 10 volts.
- d) All of the options.

1) - a

2) - b

3) - c

4) + d

19) What is the purpose when the PLC system is used with an Interposing Relay?

- a) Isolate the load from the controller.
- b) Control a high resistance.
- c) Control a high current load.
- d) Vary the speed of a motor.

1) - a

2) - b

3) + c

4) - d

20) Which device can be utilized to switch the output of a discrete DC output module?

- a) Transistor.
- b) Triac.
- c) Relay.
- d) Either Transistor or Relay.

1) - a

2) - b

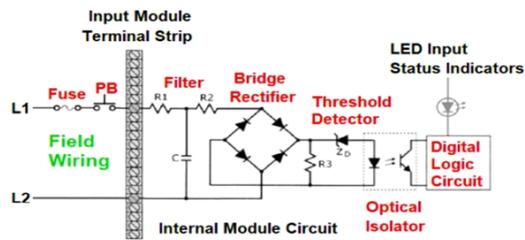
3) - c

4) + d





21) What type of module is depicted in the shown schematic diagram?



- a) Discrete output module.
- b) Analog output module.
- c) Discrete input module.
- d) Analog input module.

- 1) - a
- 2) - b
- 3) + c
- 4) - d

22) The main element of an analog output module is:

- a) AC to DC rectifier.
- b) DC to AC inverter.
- c) Analog to digital converter.
- d) Digital to analog converter.

- 1) - a
- 2) - b
- 3) - c
- 4) + d

23) A current sourcing sensor is connected to which type of PLC input module?

- a) Current sinking.
- b) Current sourcing.
- c) Alternating current.
- d) Either current sinking or sourcing.

- 1) + a
- 2) - b
- 3) - c
- 4) - d

24)





In a PLC-controlled fluid flow system as illustrated, how is the regulation of the flow achieved?



- a) By actuating the level sensor in an ON/OFF sequence.
- b) By operating the valve in a binary ON/OFF manner.
- c) By modulating the valve aperture for precise flow control.
- d) By altering the spatial positioning of the level sensor.

- 1) - a
- 2) - b
- 3) + c
- 4) - d

25) What ensures that a PLC can recover its program after a power failure?

- a) RAM.
- b) EEPROM.
- c) CPU.
- d) Insulate the circuit from other cables.

- 1) - a
- 2) + b
- 3) - c
- 4) - d

26) In PLC level measurement application, which part has a binary input and analog output value?

- a) Level transmitter.
- b) Output module.
- c) Input module.
- d) Processor.

- 1) - a
- 2) + b
- 3) - c
- 4) - d

27) What is the characteristic of high-density I/O modules in a PLC system?

- a) May have up to 64 inputs or outputs per module.
- b) Require more space.
- c) Can handle greater amounts of current per output.
- d) All of the options.

- 1) + a
- 2) - b





- 3) - c
4) - d
- 28) What is the classification basis for discrete I/O modules in a PLC system?
- a) Word oriented
 - b) Processor oriented.
 - c) Bit oriented.
 - d) Power supply oriented.
- 1) - a
2) - b
3) + c
4) - d
- 29) _____ is the device that can't be connected to the PLC output
- a) Pressure Transmitter
 - b) Motor
 - c) Control valve
 - d) None of the above
- 1) + a
2) - b
3) - c
4) - d
- 30) The ladder logic in PLC consists of _____
- a) Logic gates
 - b) Functional blocks
 - c) Relay contacts and coils
 - d) Relays
- 1) - a
2) - b
3) + c
4) - d
- 31) The relays operates on _____
- a) Low power
 - b) Control circuits of very high power
 - c) Both a and b
 - d) None of the above





- 1) - a
- 2) - b
- 3) + c
- 4) - d

32) Where you will connect a Control Valve in PLC?

- a) Analog Input Module
- b) Analog Output Module
- c) Digital Input Module
- d) Digital Output Module.

- 1) - a
- 2) + b
- 3) - c
- 4) - d

33) In PLC an analog input or analog output signal has

- a) One bit address.
- b) One byte address.
- c) One word address.
- d) One double word address

- 1) - a
- 2) - b
- 3) + c
- 4) - d

34) . What specification in a PLC system defines the number of field inputs or outputs that can be connected to a single module?

- a) Electrical isolation.
- b) Points per module.
- c) Threshold voltage.
- d) Current per input.

- 1) - a
- 2) + b
- 3) - c
- 4) - d

35)





What does the specification of an analog I/O module represent for the accurate digital representation of an analog value?

- a) The number of inputs and outputs per card.
- b) The input impedance and capacitance.
- c) The resolution.
- d) The common mode rejection ratio.

- 1) - a
- 2) - b
- 3) + c
- 4) - d

36) Which of these cannot be input for PLC

- a) Pressure Transmitter.
- b) Solenoid.
- c) Flow Switch.
- d) RTD.

- 1) - a
- 2) + b
- 3) - c
- 4) - d

37) Discrete output modules with transistor outputs can be used for control of devices.

- a) AC.
- b) DC.
- c) AC or DC.
- d) None of the above

- 1) - a
- 2) + b
- 3) - c
- 4) - d

38)



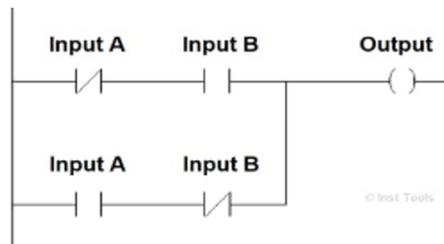


Compact PLC is also known as

- a) Fixed PLC.
- b) Medium PLC.
- c) Rack - Mounted PLC.
- d) Modular PLC.

- 1) a
- 2) b
- 3) c
- 4) d

39) What is the specific logic gate function depicted by PLC ladder logic?



- a) XOR.
- b) XNOR.
- c) NAND.
- d) NOR.

- 1) a
- 2) b
- 3) c
- 4) d

40) In the function _____, the same output address is used.

- a) set / reset.
- b) latch / unlatch.
- c) Both a and b.
- d) None of these

- 1) a
- 2) b
- 3) c
- 4) d

