



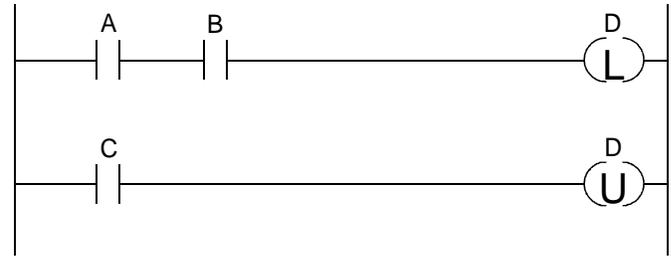
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**Sample Assessment Questions**

## Sample Assessment Questions

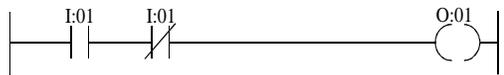
**1** Computer memory that is read and/or written or otherwise manipulated in real time by application software or the operating system and considered volatile is known as:

- A ROM
- B RAM
- C EEPROM
- D PROM



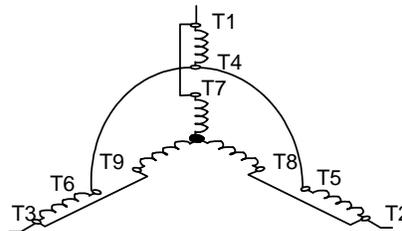
**2** In the figure above, assume that rung 2 is false and rung 1 makes a transition from true to false. As a result, the output

- A switches from on to off
- B remains off
- C remains on
- D switches from off to on



**3** Identify (if any) the logic traps that appear in the figure .

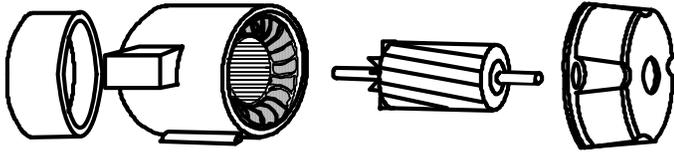
- A no way to turn rung off once true
- B no trap, rung okay
- C always on
- D always off



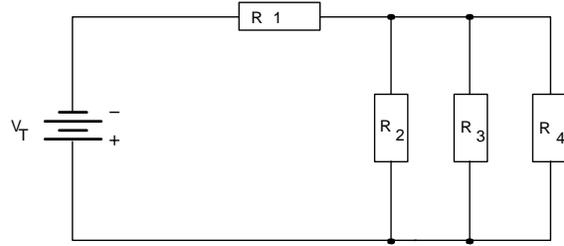
**4** The 9 lead motor connection shown in the above figure is known as:

- A Star connected; High voltage
- B Star connected; Low voltage
- C Delta connected; Low voltage
- D Delta connected; High voltage

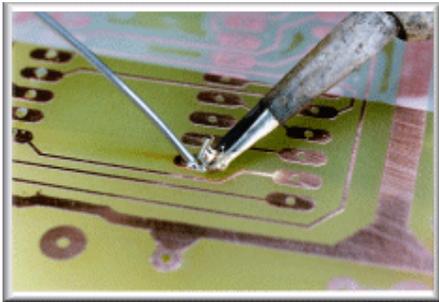
# Sample Assessment Questions



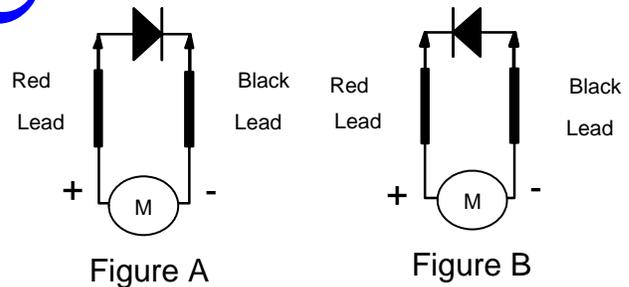
- 5** The components shown in the above diagram illustrate:
- A a wound rotor induction motor
  - B a squirrel cage induction motor
  - C a dc motor
  - D a stepper motor



- 6** In reference to the above circuit, which statement is true?
- A The current flowing through R<sub>1</sub> is the same as the total current
  - B The voltage across R<sub>2</sub> equals  $V_T$
  - C the current flowing through R<sub>2</sub> equals the current through R<sub>1</sub>
  - D all of the above

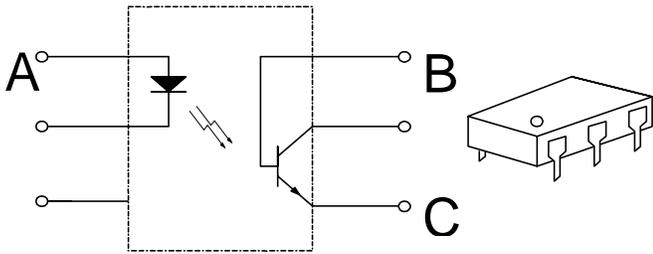


- 7** While soldering an electronic circuit board one should never utilize solder that has a rosin core.
- A True
  - B False

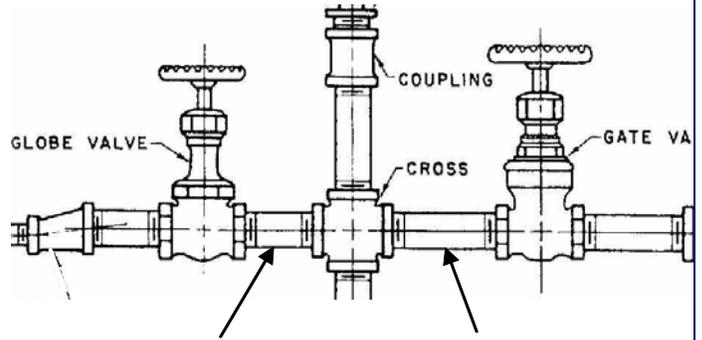


- 8** When checking a diode with an ohmmeter connected, as shown in Figures A and B, which of the following statements is TRUE?
- A Fig. A = Forward Biased; Fig. B = Forward Biased
  - B Fig. A = Forward Biased; Fig. B = Reverse Biased
  - C Fig. A = Reverse Biased; Fig. B = Forward Biased
  - D Fig. A = Reverse Biased; Fig. B = Reverse Biased

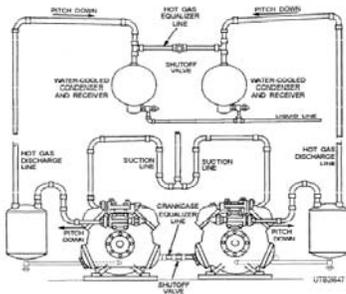
# Sample Assessment Questions



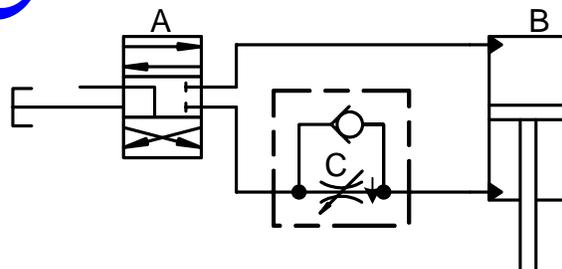
- 9** The electronic component shown in the above diagram is a/an:
- A Op Amp
  - B Opto Coupler
  - C Photo transistor
  - D And gate



- 10** What fitting needs to be added at each of the 2 heavy arrows to allow removal of the cross and vertical piping without disturbing the positions of the 2 valves?
- A coupling
  - B elbow
  - C union
  - D tee

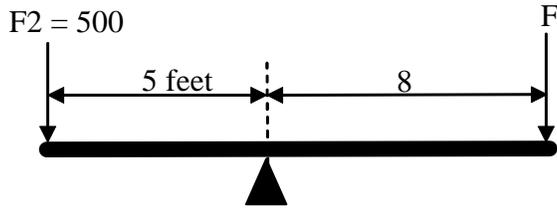


- 11** The multiple compressor configuration of refrigeration shown above is called \_\_\_\_\_.
- A Parallel Compressors with separate condensers
  - B Series compressors with separate condensers
  - C Parallel condensers with separate compressors
  - D Series condensers with separate compressors



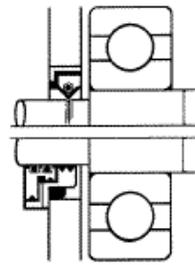
- 12** The device labeled "C" in the above hydraulic diagram is called a:
- A flow controller
  - B 2 position check valve
  - C quick exhaust
  - D by pass

## Sample Assessment Questions



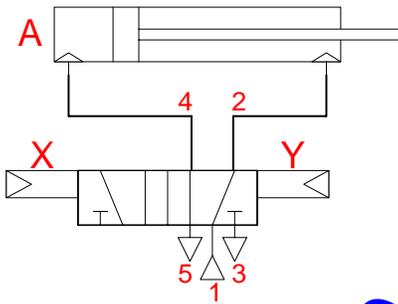
**13** In order to be in equilibrium the lever F must equal:

- A 80
- B 312.5
- C 400
- D None of the above



**14** The correct surface finish for installation of a lip seal is \_\_\_\_\_ .

- A Ra3.2 (125 U.S.)
- B Ra1.6 (63 U.S.)
- C Ra0.8 (32 U.S.)
- D Ra0.4 (16 U.S.)



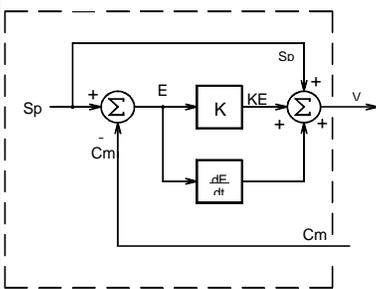
**15** In the above pneumatic schematic, which side of the control valve must be actuated in order for the cylinder to retract?

- A X
- B Y
- C Not enough information

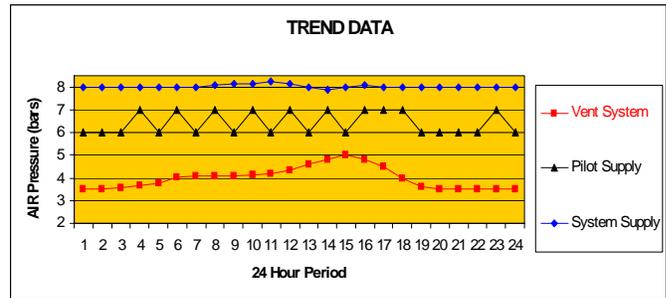
**16** If a steam trap fails open, then condensate system temperature and pressure are raised accordingly.

- A True
- B False

# Sample Assessment Questions



- 17** The mode of control shown in the electronic controller above is called:
- A Proportional
  - B Proportional with derivative
  - C proportional with integral
  - D on/off



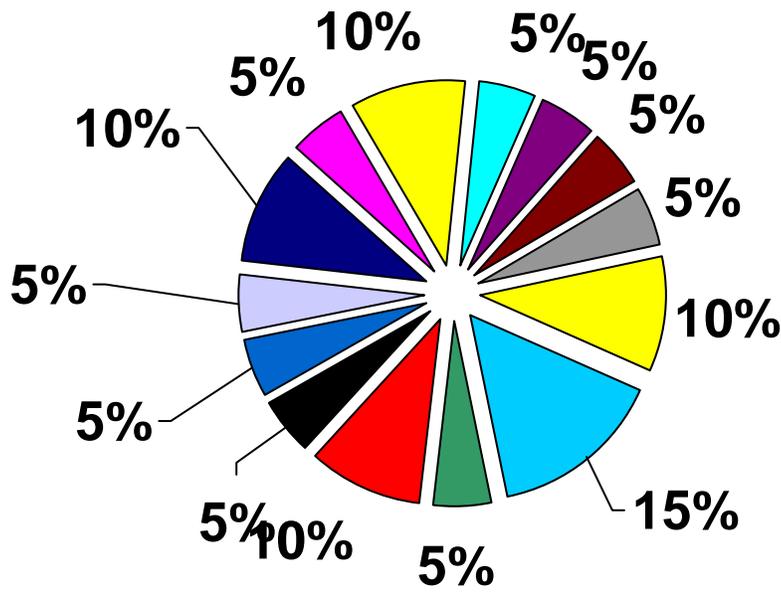
- 18** At what time was the adjustment made to the setting(s)?
- A During the 3rd hour
  - B During the 5th hour
  - C During the 12th hour
  - D During the 15th hour

- 19** Class C fires are defined as?
- A Metallic fires
  - B Electrical fires
  - C Ordinary combustable fires
  - D Grease, liquid and gas fires

- 20** When Oxy Acetylene welding, most applications can be accomplished by using a \_\_\_\_\_ flame ratio.
- A 1:1
  - B 1:2
  - C 1:3
  - D 1:4

# Sample Assessment Questions

## Assessment Topic Percentages



# of Questions: 20

Time Limit:

<u>Major Topic</u>	<u># of Questions</u>
ADMINISTRATION	1
AUTOMATION TECHNOLOGY	2
ELECTRICAL CONTROL TECHNOLOGY	3
ELECTRICAL INSTALLATION	1
ELECTRONICS TECHNOLOGY	2
FABRICATION	1
HVAC TECHNOLOGY	1
HYDRAULIC SYSTEMS	1
MECHANICAL TECHNOLOGY	2
PNEUMATIC SYSTEMS	1
PROCESS CONTROL TECHNOLOGY	2
PROCESS TROUBLESHOOTING	1
SAFETY	1
WELDING	1

# *Knowledge and Skill Assessment Areas*

## **ADMINISTRATION**

### *OFFICE COMPUTERS*

Knowledge of basic PC

## **AUTOMATION TECHNOLOGY**

### *PLC*

Knowledge of PLC concepts

### *PLC PROGRAMMING*

Knowledge of Instruction Set

## **ELECTRICAL CONTROL TECHNOLOGY**

### *AC MOTORS*

Knowledge of the construction of motors

Knowledge of wiring configurations (Wye/Delta; High/Low Voltage)

### *DC CIRCUITS*

Able to identify type of circuit (series, parallel, etc)

## **ELECTRICAL INSTALLATION**

### *INDUSTRIAL WIRING*

Knowledge of soldering irons and types of solder for specific applications

## **ELECTRONICS TECHNOLOGY**

### *COMPONENTS*

Able to identify standard symbols for semi-conductor devices

Knowledge of test procedures for SCRs, diodes, resistors, capacitors, transistors, etc

## **FABRICATION**

### *BLACK IRON*

Knowledge of common black iron pipe fitting activities (Threading, Sealing, Joining, Flanging, etc.)

## **HVAC TECHNOLOGY**

### *REFRIGERATION FUNDAMENTALS*

Knowledge of machine cooling systems (Glycol, refrigeration systems, electrical panel coolers, etc..)

## **HYDRAULIC SYSTEMS**

### *CONTROL*

Knowledge of the function and type of control components

## **MECHANICAL TECHNOLOGY**

### *APPLIED MATH*

Knowledge of the three categories of levers and the terminology related to them (force, distance, fulcrum)

### *SEALS and GASKETS*

Knowledge of common seal types

## **PNEUMATIC SYSTEMS**

### *CONTROL*

Knowledge of the function and type of control components

## **PROCESS CONTROL TECHNOLOGY**

### *BOILERS & STEAM*

Knowledge of steam trap maintenance procedures

### *ELECTRONIC CONTROLS*

Knowledge of terminology and application of each system (P, I, D)

## **PROCESS TROUBLESHOOTING**

### *PROCESS TROUBLESHOOTING*

Able to troubleshoot process problems involving temperature, flow, cycle, or operator errors.

## **SAFETY**

### *FIRE EXTINGUISHERS*

Knowledge of the different classes of fires and applications of fire extinguishers

## **WELDING**

### *TECHNOLOGY*

Knowledge of ARC

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