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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. The double-acting push button has two terminal screws.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | Push Buttons | |

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| 2. Normally open switches are drawn with the movable contact above and touching the stationary contact.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | Push Buttons | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3. The movable contact of the normally open held closed switch is drawn below the stationary contact.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | Push Buttons | |

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| 4. The symbol for a limit switch illustrates a ball float.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | Sensing Devices | |

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| 5. The flow switch symbol is used for both liquid and air flow switches.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | Sensing Devices | |

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| 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-automatic switches are generally used to select the function of a motor controller either manually or automatically.   |  |  | | --- | --- | | *ANSWER:* | ​  Hand-off  Hand off | | *POINTS:* | 1 | | *REFERENCES:* | Switch Symbols | |

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| 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ push buttons combine the operation of a selector switch and push button in the same unit.   |  |  | | --- | --- | | *ANSWER:* | Selector | | *POINTS:* | 1 | | *REFERENCES:* | Push Buttons | |

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| 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ show components in their electrical sequence without regard for physical location.   |  |  | | --- | --- | | *ANSWER:* | Schematics | | *POINTS:* | 1 | | *REFERENCES:* | Basic Schematics | |

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| 9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ switches are drawn by adding a wedge to one of the four basic switches.   |  |  | | --- | --- | | *ANSWER:* | Limit | | *POINTS:* | 1 | | *REFERENCES:* | Sensing Devices | |

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| 10. The most common coil symbol used in schematic diagrams is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   |  |  | | --- | --- | | *ANSWER:* | circle | | *POINTS:* | 1 | | *REFERENCES:* | Coils | |

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| 11. What does it mean when components are shown connected by a dashed line in a schematic diagram?   |  |  | | --- | --- | | *ANSWER:* | When components are shown connected by a dashed line in a schematic diagram, it indicates that the components are mechanically connected together. If one is pressed, all that are connected by the dashed line are pressed. | | *POINTS:* | 1 | | *REFERENCES:* | Double Acting Push Buttons | |

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| 12. Name the four basic switch symbols.   |  |  | | --- | --- | | *ANSWER:* | There are four basic symbols; normally open (NO), normally closed (NC), normally open held closed (NOHC), and normally closed held open (NCHO). | | *POINTS:* | 1 | | *REFERENCES:* | Switch Symbols | |

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| 13. What is the function of the contact referred to as a holding, sealing, or maintaining contact?   |  |  | | --- | --- | | *ANSWER:* | The function of a holding, sealing, or maintaining contact is to maintain a current path to the coil when the push button returns to its normal open position. | | *POINTS:* | 1 | | *REFERENCES:* | Basic Schematics | |

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| 14. What are the two basic types of timers?   |  |  | | --- | --- | | *ANSWER:* | The two basic types of timers are on delay and off delay. | | *POINTS:* | 1 | | *REFERENCES:* | Timed Contacts | |

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| --- | --- | --- | --- | --- | --- | --- |
| 15. Describe the contact symbol.   |  |  | | --- | --- | | *ANSWER:* | The contact symbol is two parallel lines connected by wires. | | *POINTS:* | 1 | | *REFERENCES:* | Contact Symbols | |