

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Unit 2 Electrical Quantities and Ohm's Law

1. A grounding conductor helps prevent a shock hazard in the event that an ungrounded, or hot, conductor comes in contact with the case or frame of an appliance.
- True
  - False

*ANSWER:* True

*POINTS:* 1

*REFERENCES:* 2-6 Basic Electric Circuits

2. During normal operation of a typical 120-volt appliance circuit, current flows through the hot, grounding, and neutral conductors.
- True
  - False

*ANSWER:* False

*POINTS:* 1

*REFERENCES:* 2-6 Basic Electric Circuits

3. The grounding prong of a plug should never be cut off or bypassed.
- True
  - False

*ANSWER:* True

*POINTS:* 1

*REFERENCES:* 2-6 Basic Electric Circuits

4. Voltage flows through an electric circuit like water flows through a pipe.
- True
  - False

*ANSWER:* False

*POINTS:* 1

*REFERENCES:* 2-7 The Volt

5. What law states that the force of electrostatic attraction or repulsion is directly proportional to the product of the two charges and inversely proportional to the square of the distance between them?
- Ampere's Law
  - Coulomb's Law
  - Ohm's Law
  - Volt's Law

*ANSWER:* b

*POINTS:* 1

*REFERENCES:* 2-1 The Coulomb

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6. One coulomb per second is equal to one \_\_\_\_\_.  
a. ampere  
b. ohm  
c. volt  
d. watt

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* 2-2 The Ampere

7. The velocity of AC through a conductor is \_\_\_\_\_ the speed of light.  
a. equal to  
b. greater than  
c. less than

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* 2-5 Speed of Current

8. A complete circuit is often referred to as a(n) \_\_\_\_\_ circuit.  
a. closed  
b. open  
c. shorted  
d. grounded

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* 2-6 Basic Electric Circuits

9. If a circuit is open, current \_\_\_\_\_ flow.  
a. will  
b. will not

*ANSWER:* b

*POINTS:* 1

*REFERENCES:* 2-6 Basic Electric Circuits

## Unit 2 Electrical Quantities and Ohm's Law

10. What type of circuit generally occurs when the conductors leading from and back to the power source become connected?
- a. short
  - b. grounded
  - c. open
  - d. closed

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* 2-6 Basic Electric Circuits

11. The neutral conductor is also referred to as the \_\_\_\_\_ conductor.
- a. hot
  - b. grounded
  - c. short
  - d. safety

*ANSWER:* b

*POINTS:* 1

*REFERENCES:* 2-6 Basic Electric Circuits

12. What is another term for electromotive force (EMF)?
- a. Amperage
  - b. Ohmage
  - c. Voltage
  - d. Wattage

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* 2-7 The Volt

13. The amount of potential necessary to cause one coulomb to produce one joule of work is a(n) \_\_\_\_\_.
- a. ampere
  - b. ohm
  - c. volt
  - d. watt

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* 2-7 The Volt

## Unit 2 Electrical Quantities and Ohm's Law

14. The unit of resistance to current flow is the \_\_\_\_\_.  
a. ampere  
b. ohm  
c. volt  
d. watt

*ANSWER:* b

*POINTS:* 1

*REFERENCES:* 2-8 The Ohm

15. What causes a wire to become warm when current flows through it?  
a. amperage  
b. resistance  
c. voltage  
d. divergence

*ANSWER:* b

*POINTS:* 1

*REFERENCES:* 2-8 The Ohm

16. The amount of electrical power being used in a circuit is measured in \_\_\_\_\_.  
a. amperes  
b. volts  
c. ohms  
d. watts

*ANSWER:* d

*POINTS:* 1

*REFERENCES:* 2-9 The Watt

17. Approximately how many horsepower is an electrical device listed as 3,000 watts?  
a. 1/4  
b. 1/6  
c. 4  
d. 6

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* 2-10 Other Measures of Power

## Unit 2 Electrical Quantities and Ohm's Law

18. The statement, "In a DC circuit, the current is directly proportional to voltage and inversely proportional to resistance," is known as \_\_\_\_\_ law.
- a. Ampere's
  - b. Coulomb's
  - c. Ohm's
  - d. Volt's

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* 2-11 Ohm's Law

19. An electrical circuit has a voltage of 50 V and a resistance of 5  $\Omega$ . What is the value of current?
- a. 10 A
  - b. 45 A
  - c. 55 A
  - d. 250 A

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* 2-11 Ohm's Law

20. An electric motor is running on 120 V. The current is measured to be 2 A. How many ohms of resistance is the motor?
- a. 60
  - b. 118
  - c. 122
  - d. 240

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* 2-11 Ohm's Law

21. An electric circuit has a resistance of 20  $\Omega$ . The current is measured to be 6 A. How many volts are applied to the circuit?
- a. 3  $\frac{1}{3}$
  - b. 14
  - c. 26
  - d. 120

*ANSWER:* d

*POINTS:* 1

*REFERENCES:* 2-11 Ohm's Law

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## Unit 2 Electrical Quantities and Ohm's Law

22. A toaster is listed as 1560 W. When it is plugged into a 120 V circuit and starts to make toast, how many amperes will it draw?
- a. 13
  - b. 1440
  - c. 1680
  - d. 187,200

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* 2-11 Ohm's Law

23. What standard prefix in engineering notation indicates multiplication by 1,000,000,000?
- a. kilo (K)
  - b. tera (T)
  - c. giga (G)
  - d. mega (M)

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* 2-12 Metric Prefixes

24. Conventional current flow theory states that current flows from the most positive point to the most \_\_\_\_\_.

*ANSWER:* negative

*POINTS:* 1

*REFERENCES:* 2-4 The Conventional Current Flow Theory

25. The theory concerning current flow that is most widely accepted as being correct is the \_\_\_\_\_ flow theory.

*ANSWER:* electron

*POINTS:* 1

*REFERENCES:* 2-3 The Electron Flow Theory