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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.
   a. True
   b. 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.
   a. True
   b. 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.
   a. True
   b. False

   ANSWER: True
   POINTS: 1
   REFERENCES: 2-6 Basic Electric Circuits

4. Voltage flows through an electric circuit like water flows through a pipe.
   a. True
   b. 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?
   a. Ampere’s Law
   b. Coulomb’s Law
   c. Ohm’s Law
   d. 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

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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

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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

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18. The statement, “In a DC circuit, the current is directly proportional to voltage and inversely proportional to resistance,” is know 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 Ω. 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 Ω. The current is measured to be 6 A. How many volts are applied to the circuit?
    a. 3 1/3
    b. 14
    c. 26
    d. 120

    ANSWER: d
    POINTS: 1
    REFERENCES: 2-11 Ohm's Law

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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

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