Instructions

Complete the following questions related to electricity. Write your answers in the space provided.

Questions

1. Define the term "current" in the context of electricity.
   Answer: _____
2. What is the unit of current?
   Answer: _____
3. Explain the difference between direct current (DC) and alternating current (AC).
   Answer: _____
4. What is Ohm's Law? Write the formula and explain each symbol.
   Answer: _____
5. Calculate the current if 12 volts are applied across a resistor of 4 ohms.
   Answer: _____
6. What is resistance? What is its unit?
   Answer: _____
7. What is the formula to calculate electrical power?
   Answer: _____
8. Calculate the power if the voltage is 230 volts and the current is 10 amps.
   Answer: _____
9. Describe the function of a fuse in an electrical circuit.
   Answer: _____
10. What is the role of a circuit breaker?
    Answer: _____
11. What is a series circuit? Explain its characteristics.
    Answer: _____
12. What is a parallel circuit? Explain its characteristics.
    Answer: _____
13. What happens to the total resistance in a series circuit when more resistors are added?
    Answer: _____
14. How does the total current behave in a parallel circuit?
    Answer: _____
15. State two advantages of using a circuit in parallel instead of a series circuit.
    Answer: _____
16. What is the purpose of an insulator? Give an example.
    Answer: _____
17. Explain what is meant by "electrical energy".
    Answer: _____
18. How can electrical energy be converted into other forms of energy? Give two examples.
    Answer: _____
19. What is the difference between a conductor and an insulator?
    Answer: _____
20. Describe the effect of temperature on the resistance of a conductor.
    Answer: _____
21. What are semiconductors? Provide one use.
    Answer: _____
22. Explain what is meant by "electrical safety".
    Answer: _____
23. List three safety precautions to take when using electrical appliances.
    Answer: _____
24. Explain the term "short circuit". What are its potential dangers?
    Answer: _____
25. Describe the symbol for a battery in an electrical circuit diagram.

Answer: _____

26. What is a voltmeter and what is it used for?
    Answer: _____

Memo

1. The flow of electric charge.
2. Amperes (A).
3. DC flows in one direction; AC periodically reverses direction.
4. V = IR (Voltage = Current x Resistance).
5. 3 Amps (I = V/R = 12V/4Ω).
6. Resistance is the opposition to the flow of current; unit is ohms (Ω).
7. P = IV (Power = Current x Voltage).
8. 2300 Watts (P = 230V x 10A).
9. To protect wiring and appliances from overload.
10. To automatically cut off the current in the event of a fault.
11. Components arranged in a single pathway; if one fails, current stops.
12. Components arranged in multiple pathways; if one fails, current continues in others.
13. Total resistance increases.
14. Total current increases as more branches are added.
15. More devices can be used independently; if one stops working, others are unaffected.
16. To prevent the flow of electric current; e.g., rubber.
17. Energy transferred by electric charge; it can do work.
18. Heaters (thermal) and motors (mechanical).
19. Conductors allow electricity to pass; insulators do not.
20. Resistance usually increases with temperature.
21. Materials that can conduct electricity under certain conditions; e.g., silicon in diodes.
22. It refers to practices that prevent electric shock and fire hazards.
23. Keep appliances away from water; do not overload circuits; check for frayed wires.
24. A low-resistance connection; can cause overheating or fire.
25. A long line with two shorter lines at one end.
26. A device used to measure voltage.