Electricity and Magnetism Concepts

Physics · Answer Key · 28 Questions

1. What component converts electrical current into motion?

A) Generator
B) Electric motor
C) Electromagnet
D) Resistor

2. What is electrical current?

A) Electrons flowing
B) A magnetic field
C) A voltage difference
D) A material that conducts electricity

3. What is an electromagnet?

A) A material that does not conduct electricity
B) A component that stores charge
C) A coil with an iron core that becomes magnetic when current flows
D) A device that increases or decreases voltage

4. What phenomenon occurs when current flows in a conductor, creating a magnetic field around it?

A) Induction
B) Capacitance
C) Electromagnetism
D) Resistance

5. What is an electron?

A) A material that conducts electricity
B) A negatively charged particle that moves around the atomic nucleus
C) A component that strengthens current
D) A device that converts motion to electricity

6. What does a generator do?

A) Converts electrical current to motion
B) Converts motion to electrical current
C) Stores electrical charge
D) Reduces electrical current

7. What is a rectifier?

A) A component that allows current in both directions
B) A component that allows current in one direction and stops it in the other
C) A component that measures resistance
D) A component that amplifies current

8. What is induction?

A) The ability to store electrical charge
B) The resistance to electrical current
C) When moving magnetic field lines create an electric current in a conductor
D) A component that stores charge

9. Which of these is an example of an insulator?

A) Metal
B) Glass
C) Copper
D) Plastic

10. What is capacitance?

A) The ability to store electrical charge in a capacitor
B) The resistance to electrical current
C) The difference in charge between poles
D) The flow of electrons

11. What is a capacitor?

A) A component that stores charge
B) A component that increases voltage
C) A material that conducts electricity
D) A device that converts motion to electricity

12. Which of these is an example of a conductor?

A) Wood
B) Plastic
C) Glass
D) Metals

13. What is direct current (DC)?

A) Current that flows back and forth
B) Current that is pushed by a DC voltage and flows in the same direction
C) Current that is pushed by an AC voltage
D) Current that is amplified

14. What are the poles of a magnet?

A) Positive and negative
B) North and south
C) Conductive and resistive
D) Capacitive and inductive

15. What is Ohm's law?

A) Voltage = Resistance / Current
B) Current = Voltage * Resistance
C) Voltage = Resistance * Current
D) Resistance = Voltage / Current

16. What is resistance?

A) The flow of electrons
B) The ability to store charge
C) Opposition to electrical current
D) The creation of a magnetic field

17. What unit is used to measure resistance?

A) Ampere (A)
B) Volt (V)
C) Farad (F)
D) Ohm (?)

18. What is a resistor?

A) A component that increases current
B) A component used to reduce current in a circuit
C) A component that stores charge
D) A component that generates current

19. What is voltage?

A) The flow of electrons
B) The opposition to current
C) The difference in charge between poles that pushes electrons
D) The ability to store charge

20. What unit is used to measure voltage?

A) Ampere (A)
B) Ohm (?)
C) Farad (F)
D) Volt (V)

21. What does a transformer do?

A) Increases or decreases the voltage of an alternating current
B) Increases or decreases the current of a direct current
C) Stores electrical charge
D) Converts motion to electrical current

22. What is a transistor?

A) A component that stores charge
B) A component that can amplify weak currents
C) A device that converts motion to electricity
D) A component that allows current in one direction

23. What is alternating current (AC)?

A) Current that flows in one direction
B) Current that is pushed back and forth by a voltage
C) Current that is pushed by a DC voltage
D) Current from a battery

24. What happens if the current in a conductor increases?

A) The magnetic field weakens
B) The magnetic field strengthens
C) The resistance increases
D) The voltage decreases

25. What happens if you switch off the current in a conductor?

A) The magnetic field strengthens
B) The magnetic field disappears
C) The resistance increases
D) The voltage increases

26. What happens if the current changes direction in a conductor?

A) The magnetic field disappears
B) The magnetic field strengthens
C) The magnetic field changes direction
D) The resistance decreases

27. What is the unit for electric current?

A) Volt (V)
B) Ohm (?)
C) Farad (F)
D) Ampere (A)

28. What is the unit for capacitance?

A) Volt (V)
B) Ampere (A)
C) Ohm (?)
D) Farad (F)