

# Electricity and Magnetism Concepts

Physics · Practice Test · 28 Questions

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## 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)