

Electrical Engineering Essentials

Electrical Engineering · Practice Test · 20 Questions

1. Which subatomic particle is primarily responsible for the flow of electric current in a copper wire?

- A) Proton
- B) Neutron
- C) Electron
- D) Positron

2. What is the standard SI unit used to measure electrical resistance?

- A) Volt
- B) Ohm
- C) Ampere
- D) Watt

3. In an electrical circuit, what does a capacitor primarily store?

- A) Magnetic energy
- B) Chemical energy
- C) Electric charge
- D) Thermal energy

4. Which component is designed to allow current to flow in only one direction?

- A) Resistor
- B) Diode
- C) Capacitor
- D) Transformer

5. What is the primary function of a transformer in an electrical power grid?

- A) To store excess electricity
- B) To convert AC to DC
- C) To change voltage levels
- D) To measure current flow

6. Which material is considered a semiconductor commonly used to make computer chips?

- A) Copper
- B) Silicon
- C) Rubber
- D) Gold

7. What does the acronym LED stand for in electrical engineering?

- A) Light Emitting Diode
- B) Low Energy Device
- C) Linear Electric Drive
- D) Light Electric Display

8. According to Ohm's Law, what is the relationship between Voltage (V), Current (I), and Resistance (R)?

- A) $V = I / R$
- B) $V = I * R$
- C) $V = R / I$
- D) $V = I + R$

9. What is the purpose of a fuse in an electrical circuit?

- A) To increase voltage
- B) To store electricity
- C) To break the circuit during an overload
- D) To convert current to heat

10. Which device is used to measure the electric potential difference between two points?

- A) Ammeter
- B) Voltmeter
- C) Ohmmeter
- D) Galvanometer

11. In a series circuit, what remains constant across all components?

- A) Voltage
- B) Current
- C) Resistance
- D) Power

12. What is the unit of electrical power?

- A) Joule
- B) Watt
- C) Volt-Ampere
- D) Coulomb

13. Which law states that the sum of currents entering a junction must equal the sum of currents leaving it?

- A) Ohm's Law
- B) Faraday's Law
- C) Kirchhoff's Current Law
- D) Coulomb's Law

14. What type of electricity flows in one constant direction?

- A) Alternating Current (AC)
- B) Direct Current (DC)
- C) Static Electricity
- D) Electromagnetic Pulse

15. What do we call a material that strongly opposes the flow of electric current?

- A) Conductor
- B) Insulator
- C) Semiconductor
- D) Superconductor

16. Which part of a circuit produces a magnetic field when current flows through it?

- A) Resistor
- B) Capacitor
- C) Inductor
- D) Switch

17. What is the primary metal used in most electrical wiring due to its high conductivity?

- A) Iron
- B) Copper
- C) Aluminum
- D) Lead

18. What happens to the total resistance in a circuit if you add more resistors in parallel?

- A) It increases
- B) It decreases
- C) It stays the same
- D) It doubles

19. What is the term for the opposition to the flow of alternating current in a capacitor or inductor?

- A) Resistance
- B) Reactance
- C) Conductance
- D) Impedance

20. Which frequency of alternating current is used in most Australian household outlets?

- A) 50 Hz
- B) 60 Hz
- C) 100 Hz
- D) 120 Hz