

Grade 9 Electricity Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. Which term describes the energy produced by the flow of electrons in an electric circuit?**
 - A. Electrical Energy**
 - B. Current Electricity**
 - C. Semiconductor**
 - D. Piezoelectric effect**

- 2. Which term is used for the energy transported by electrical charges as they move through a circuit?**
 - A. Electrical Energy**
 - B. Current Electricity**
 - C. Insulator**
 - D. Piezoelectric effect**

- 3. What is the unit of the electric current?**
 - A. Volt**
 - B. Watt**
 - C. Ohm**
 - D. Ampere**

- 4. $E = P \times T$ is used to calculate which quantity?**
 - A. Power (Watts)**
 - B. Energy (Joules)**
 - C. Time (Seconds)**
 - D. Charge (C)**

- 5. Instrument used to measure voltage across a component.**
 - A. Voltmeter**
 - B. Ammeter**
 - C. Galvanometer**
 - D. Ohmmeter**

- 6. What term describes a flow of electrons that alternates in direction in an electric circuit?**
- A. Alternating Current**
 - B. Direct Current**
 - C. Electric Generator**
 - D. Photovoltaic Cell**
- 7. Which energy is derived from the sun and converted into thermal or electrical energy?**
- A. Geothermal energy**
 - B. Wind energy**
 - C. Solar energy**
 - D. Fuse**
- 8. Which quantity is measured in ohms?**
- A. Voltage**
 - B. Current**
 - C. Resistor (Ohms)**
 - D. Power**
- 9. Electricity generated by flowing water**
- A. Wind Power**
 - B. Geothermal**
 - C. Hydroelectric Power**
 - D. Coal-fired Power**
- 10. A circuit has a 12 V source and two resistors in parallel: 4 Ω and 6 Ω . What is the total current?**
- A. 3 A**
 - B. 2 A**
 - C. 1 A**
 - D. 5 A**

Answers

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1. A
2. A
3. D
4. B
5. A
6. A
7. C
8. C
9. C
10. D

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Explanations

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1. Which term describes the energy produced by the flow of electrons in an electric circuit?

- A. Electrical Energy**
- B. Current Electricity**
- C. Semiconductor**
- D. Piezoelectric effect**

Electrical energy is the energy carried by electric charges as they move in a circuit. When electrons flow from a power source through wires to devices, they transfer energy that can be transformed into light, heat, motion, or sound. The amount of energy delivered depends on how long the current flows and the voltage, expressed by $E = V I t$ (or power $P = V I$). The flow of electrons describes current, which is about the movement of charge, not the energy itself. A semiconductor is a material used to control that flow, not the energy. The piezoelectric effect describes generating voltage from mechanical stress, not the energy produced by a steady electron flow in a circuit.

2. Which term is used for the energy transported by electrical charges as they move through a circuit?

- A. Electrical Energy**
- B. Current Electricity**
- C. Insulator**
- D. Piezoelectric effect**

In a circuit, the energy carried by moving charges is electrical energy. When charges flow from the power source through components like bulbs or resistors, they transfer energy to those components, which is the electrical energy being delivered. Voltage tells you how much energy per unit charge is available, while current is about how many charges are moving per second, and power tells you how fast that energy is being transferred ($P = V \times I$). The other terms describe different ideas: current electricity refers to the flow of charges, not the energy itself; an insulator is a material that resists the flow of charges; and the piezoelectric effect involves generating electricity from mechanical stress or changing shape with an electric field.

3. What is the unit of the electric current?

- A. Volt**
- B. Watt**
- C. Ohm**
- D. Ampere**

Current is the rate at which electric charge flows through a point in a circuit. The unit for that rate is the ampere, symbol A, defined as one coulomb of charge passing a point every second. That direct link to how much charge moves per unit time makes the ampere the natural unit for current. In contrast, voltage (volt) measures potential difference, resistance (ohm) measures how much a component resists current, and power (watt) combines current and voltage to describe energy transfer. So when we talk about how much charge is flowing each second, we're using amperes. In practice, devices called ammeters measure this flow in amperes by placing them in series with the circuit.

4. $E = P \times T$ is used to calculate which quantity?

- A. Power (Watts)
- B. Energy (Joules)**
- C. Time (Seconds)
- D. Charge (C)

Energy is the amount of work done or energy transferred, and it can be found by multiplying power by time. Power is the rate at which energy is used or produced, so knowing how fast energy is being transferred (power) and for how long (time) lets you compute the total energy that has moved: $E = P \times T$. The units fit neatly: watts times seconds give joules, since 1 watt equals 1 joule per second. For example, a device using 100 watts for 1800 seconds transfers $100 \times 1800 = 180,000$ joules of energy. This relation isn't about the other quantities—power is the rate, time is the duration, and charge is a different quantity entirely—so only energy comes from multiplying power by time.

5. Instrument used to measure voltage across a component.

- A. Voltmeter**
- B. Ammeter
- C. Galvanometer
- D. Ohmmeter

Measuring voltage across a component is about reading the potential difference between two points. The instrument you use for this is a voltmeter. It's connected in parallel with the component so it experiences the same two nodes and reads the voltage across it without pulling significant current from the circuit. In practice, a voltmeter has very high internal resistance, which keeps its impact on the circuit minimal. The other instruments measure different quantities: an ammeter measures current and goes in series; a galvanometer gauges small currents (and can be used as a sensing element in some voltmeters, but on its own it's not a voltmeter); an ohmmeter measures resistance by applying a test current and reading the resulting voltage. So, the device for voltage across a component is the voltmeter.

6. What term describes a flow of electrons that alternates in direction in an electric circuit?

- A. Alternating Current**
- B. Direct Current
- C. Electric Generator
- D. Photovoltaic Cell

Alternating current describes a flow of electrons that reverses direction periodically. In AC, the electric charge oscillates back and forth, so the current changes sign many times per second. This back-and-forth motion means the voltage also switches polarity, which is why power grids use AC—you can easily step voltages up or down with transformers for efficient long-distance transmission. In households, the direction reverses 50 or 60 times each second depending on the region. By contrast, direct current flows in one direction only, such as from a battery. A generator is a device that produces electrical energy, and a photovoltaic cell converts light into electricity; neither describes the directional reversal of current itself.

7. Which energy is derived from the sun and converted into thermal or electrical energy?

- A. Geothermal energy**
- B. Wind energy**
- C. Solar energy**
- D. Fuse**

Solar energy is energy from the sun that can be converted into heat or electricity. In solar thermal systems, sunlight heats a fluid in collectors, and that heat can produce steam to run a turbine, giving thermal energy as electricity. In photovoltaic systems, light from the sun excites electrons in a semiconductor like silicon, creating an electric current directly. Geothermal energy comes from heat inside the Earth, not the Sun. Wind energy relies on moving air created by solar heating of the atmosphere, so it's solar-influenced but captures the wind's kinetic energy rather than sunlight photons directly. Fuse isn't a type of energy source.

8. Which quantity is measured in ohms?

- A. Voltage**
- B. Current**
- C. Resistor (Ohms)**
- D. Power**

Ohms measure resistance—the opposition a component offers to the flow of electric current. Ohm's law ties these ideas together with $V = IR$, so resistance equals voltage divided by current, and its unit is the ohm. So the quantity you express in ohms is resistance, the property of a component like a resistor that determines how much current will flow for a given voltage. Remember, voltage uses volts, current uses amperes, and power uses watts.

9. Electricity generated by flowing water

- A. Wind Power**
- B. Geothermal**
- C. Hydroelectric Power**
- D. Coal-fired Power**

Electricity generated by flowing water is hydroelectric power. In this setup, water from a river or dam flows through a turbine, and the moving water transfers its energy to the turbine blades, making the turbine spin. That mechanical energy is then converted by a generator into electrical energy as magnets and coils interact. Because the energy source is the flow and drop of water, this method is renewable when water remains available. Other options describe different energy sources: wind power uses moving air to turn turbines; geothermal uses heat from beneath the Earth's surface to produce steam; coal-fired power relies on burning coal to boil water and produce steam. None of these require flowing water as their primary energy source.

10. A circuit has a 12 V source and two resistors in parallel: 4 Ω and 6 Ω . What is the total current?

- A. 3 A**
- B. 2 A**
- C. 1 A**
- D. 5 A**

In a parallel circuit, the total current is the sum of the currents through each branch because each resistor draws current independently from the same voltage source. The 12 V is across both resistors, so the current through each branch is $I = V/R$. Through the 4 Ω resistor: $12 \text{ V} / 4 \Omega = 3 \text{ A}$. Through the 6 Ω resistor: $12 \text{ V} / 6 \Omega = 2 \text{ A}$. Total current: $3 \text{ A} + 2 \text{ A} = 5 \text{ A}$. You can also see this with the equivalent resistance: $R_{eq} = 1 / (1/4 + 1/6) = 2.4 \Omega$, and $I_{total} = 12 \text{ V} / 2.4 \Omega = 5 \text{ A}$.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://grade9electricity.examzify.com>

We wish you the very best on your exam journey. You've got this!

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