

LMS SUBSTATION 1ST YEAR, LEVEL II PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

<https://lmssubstation1stylr1v12.examzify.com>



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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. What are the smaller sub-particles of the proton and neutron called?
 - A. Electrons
 - B. Quarks
 - C. Atoms
 - D. Nuclei
2. In Ohm's Law, resistance is represented by which letter?
 - A. R
 - B. V
 - C. I
 - D. E
3. What should be covered in a pie diagram to determine one of the three factors in Ohm's Law?
 - A. Voltage
 - B. Current
 - C. Resistance
 - D. Any of the three factors
4. Select the correct resistance measurement when the meter switch is in the "20M" position.
 - A. 0.22 MOhms
 - B. 220K Ohms
 - C. 220,000 Ohms
 - D. All of the above
5. What type of matter is defined as having a definite shape and volume?
 - A. Gas
 - B. Liquid
 - C. Semi-solid
 - D. Solid

6. If the power is 72 watts and the current is 3 amps, what is the voltage of the circuit?
- A. 20 V
 - B. 24 V
 - C. 30 V
 - D. 28 V
7. What type of number is used to represent a quantity less than zero?
- A. Positive
 - B. Whole
 - C. Negative
 - D. Integer
8. What is the simplest form of any matter called?
- A. Compound
 - B. Molecule
 - C. Element
 - D. Atom
9. If the voltage across a resistor is increased while keeping the resistance constant, what happens to the power consumption?
- A. It decreases
 - B. It remains constant
 - C. It increases
 - D. It stops
10. According to the correct method for measuring resistance, what is wrong when the meter is connected across Resistor 1?
- A. The setup correctly measures Resistor 1
 - B. The setup does not measure resistance accurately
 - C. The meter reads the resistance of both Resistor 1 and Resistor 2
 - D. The resistance is not in the proper range

Answers

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

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Explanations

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1. What are the smaller sub-particles of the proton and neutron called?

- A. Electrons
- B. Quarks**
- C. Atoms
- D. Nuclei

The smaller sub-particles of the proton and neutron are called quarks. These fundamental particles combine in groups to form protons and neutrons, which are the building blocks of atomic nuclei. Quarks come in different types, known as "flavors," such as up, down, strange, charm, top, and bottom. Protons are made up of two up quarks and one down quark, while neutrons are composed of one up quark and two down quarks. Understanding the composition of protons and neutrons is essential in physics, as it lays the groundwork for understanding atomic structure and the fundamental forces that govern interactions between particles. In contrast, electrons are not sub-particles of protons or neutrons; they are elementary particles that orbit the nucleus of an atom, while atoms are the smallest units of matter that retain the properties of an element, and nuclei refer to the central part of an atom that contains protons and neutrons. This distinction highlights the specific role that quarks play in the subatomic structure.

2. In Ohm's Law, resistance is represented by which letter?

- A. R**
- B. V
- C. I
- D. E

In Ohm's Law, resistance is represented by the letter R. Ohm's Law is a fundamental principle in electrical engineering that relates voltage (V), current (I), and resistance (R) through the equation $V = I \times R$. In this equation, R is the resistance measured in ohms (Ω), indicating how much the flow of electric current is opposed within a circuit. Understanding this relationship is crucial for analyzing and troubleshooting electrical circuits effectively. Other letters such as V and I are used to represent voltage and current, respectively, but R specifically denotes resistance, which is why it is the correct answer in the context of the question.

3. What should be covered in a pie diagram to determine one of the three factors in Ohm's Law?

- A. Voltage
- B. Current
- C. Resistance
- D. Any of the three factors**

To understand which factors can be covered in a pie diagram for determining one of the three components of Ohm's Law, it is essential to recognize that Ohm's Law establishes a relationship between voltage, current, and resistance. The law states that the voltage (V) across a conductor is equal to the current (I) flowing through it multiplied by the resistance (R) of that conductor, represented by the equation $V = I \times R$. A pie diagram is often used to show a breakdown of parts of a whole, making it a useful tool for visualizing relationships and proportions between different components. In the context of Ohm's Law, any one of the three factors—voltage, current, or resistance—can be represented in such a diagram to analyze their interactions. By isolating one factor while considering the other two, one can draw conclusions about how the changes in one component impact the others. For example, if you concentrate on voltage while the current and resistance are represented proportionally, you can visualize how altering voltage affects the overall circuit. This approach allows for the flexibility of using any single component to explore its implications in relation to the others. Thus, the answer indicating that any of the three factors can be covered in the pie diagram

4. Select the correct resistance measurement when the meter switch is in the "20M" position.

- A. 0.22 MOhms
- B. 220K Ohms
- C. 220,000 Ohms
- D. All of the above**

When the meter switch is in the "20M" position, the reading from the meter corresponds to a range of resistance measurements that can be expressed in different units. In this case, "20M" refers to a maximum reading capability of 20 megohms (MOhms), where 1 MOhm is equal to 1,000,000 ohms. The resistance values provided can be converted as follows: - 0.22 MOhms is equivalent to 220,000 ohms. - 220K ohms is another way of expressing 220,000 ohms, since 1 KOhm equals 1,000 ohms. - Consequently, 220,000 ohms directly reflects the numeric value given. Thus, all three values—0.22 MOhms, 220K ohms, and 220,000 ohms—represent the same resistance measurement but in different units. Therefore, the selection of "All of the above" is correct since each option accurately describes the same resistance amount in various standard notations. This reflects an understanding of the relationship between the different units of resistance measurement.

5. What type of matter is defined as having a definite shape and volume?

- A. Gas
- B. Liquid
- C. Semi-solid
- D. Solid**

The type of matter that is characterized by having a definite shape and volume is solid. In solids, the particles are closely packed together in a fixed arrangement, which allows them to maintain a specific shape and volume regardless of the container they are placed in. This contrasts with liquids, which have a definite volume but take the shape of their container, and gases, which have neither a definite shape nor volume and expand to fill any available space. Semi-solids can exhibit properties of both solids and liquids, but they do not possess the strict characteristics that define a solid, particularly in terms of having a consistent shape. Thus, solids are uniquely identified by their rigidity and stability in both shape and volume.

6. If the power is 72 watts and the current is 3 amps, what is the voltage of the circuit?

- A. 20 V
- B. 24 V**
- C. 30 V
- D. 28 V

To determine the voltage of the circuit when the power is known, you can use the formula relating power (P), voltage (V), and current (I): $P = V \times I$. In this case, you have: - Power (P) = 72 watts - Current (I) = 3 amps. To find the voltage (V), you can rearrange the formula: $V = \frac{P}{I}$. Substituting in the given values: $V = \frac{72 \text{ watts}}{3 \text{ amps}}$. Calculating this yields: $V = 24 \text{ volts}$. Thus, the voltage of the circuit is 24 volts, which corresponds to the given answer. Understanding this relationship is essential in electrical circuits, as it allows for the calculation of one fundamental quantity when the other two are known. The formula is derived from Ohm's law and is universally applicable across various electrical engineering scenarios.

7. What type of number is used to represent a quantity less than zero?

- A. Positive
- B. Whole
- C. Negative**
- D. Integer

The type of number used to represent a quantity less than zero is classified as a negative number. Negative numbers are essential for modeling values that fall below zero, such as temperatures in a cold climate or financial debts. They extend the number line in the opposite direction from positive integers, allowing for a comprehensive numerical system that accommodates both sides of zero. Positive numbers represent quantities greater than zero; whole numbers are non-negative integers that include zero and positive integers; and integers encompass both positive and negative numbers as well as zero. Therefore, within this context, negative numbers specifically refer to those values that indicate quantities less than zero, making them the correct choice.

8. What is the simplest form of any matter called?

- A. Compound
- B. Molecule
- C. Element**
- D. Atom

The simplest form of any matter is referred to as an element. An element is a pure substance that cannot be broken down into simpler substances by chemical means. Each element is made up of atoms, which are the smallest units retaining the properties of that element. There are 118 known elements, each represented on the periodic table with a unique atomic number corresponding to the number of protons in its nucleus. Molecules, on the other hand, consist of two or more atoms bonded together. Compounds are specific types of molecules made up of atoms from different elements. Therefore, while molecules and compounds relate to combinations of elements, the term element itself specifically describes the fundamental building blocks of matter that remain unchanged in their simplest form.

9. If the voltage across a resistor is increased while keeping the resistance constant, what happens to the power consumption?

- A. It decreases
- B. It remains constant
- C. It increases**
- D. It stops

When the voltage across a resistor is increased while maintaining a constant resistance, the power consumed by the resistor increases. This relationship is governed by the formula for electrical power, which is defined as $P = V^2/R$, where P represents power, V represents voltage, and R represents resistance. In this formula, if the resistance (R) is constant and the voltage (V) is increased, the square of the voltage (V^2) will also increase. Since the power is directly proportional to the square of the voltage and inversely proportional to resistance, an increase in voltage will lead to a significant rise in power consumption. Hence, as the voltage increases, the electrical power consumed by the resistor correspondingly increases as well. This principle is fundamental to understanding the behavior of resistors in electrical circuits.

10. According to the correct method for measuring resistance, what is wrong when the meter is connected across Resistor 1?

- A. The setup correctly measures Resistor 1
- B. The setup does not measure resistance accurately
- C. The meter reads the resistance of both Resistor 1 and Resistor 2**
- D. The resistance is not in the proper range

When a measurement is taken across Resistor 1 in a circuit that includes another resistor (Resistor 2), the meter measures the equivalent resistance of both resistors rather than just Resistor 1. This occurs because the meter is connected across Resistor 1, and if Resistor 2 is also part of the circuit path, the resistance from both components is included in the measurement. This situation can lead to an inaccurate reading when trying to determine the resistance of Resistor 1 alone, as the presence of Resistor 2 skews the results. To accurately measure the resistance of a single component, it is typically necessary to isolate that component from the rest of the circuit. By ensuring only Resistor 1 is connected to the meter, the reading would reflect its true resistance without interference from any other resistors in the circuit. Other options present alternative scenarios that either affirm the correctness of the setup or address different aspects of resistance measurement, but they do not accurately describe the impact of measuring across multiple resistors in series or parallel.

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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://lmssubstation1styr1vl2.examzify.com>

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

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