

LINEMAN'S TEST C PRACTICE (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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 option best describes the domain where 230 kV is commonly applied?**
 - A. Distribution Systems
 - B. Transmission Systems
 - C. Industrial Customer Systems
 - D. Generation Systems
- 2. Protective relays in substations detect faults to trip breakers. Which faults are they most commonly recognizing?**
 - A. short circuits and grounds
 - B. damaged poles
 - C. defective hardware
 - D. broken strands
- 3. For a transformer with primary 2400 V and secondary 4160 V, if the primary is supplied with 2400 V, the secondary voltage is:**
 - A. 120 V
 - B. 240 V
 - C. 2400 V
 - D. 4160 V
- 4. Which statement about transmission lines is true?**
 - A. They are always overhead
 - B. They can be overhead or underground
 - C. They are always underground
 - D. They cannot be buried
- 5. One gigawatt equals how many megawatts?**
 - A. 100MW
 - B. 1000MW
 - C. 10MW
 - D. 10000MW

- 6. Which voltage range is typical for generating electric energy?**
- A. 100-200 V
 - B. 1000-2000 V
 - C. 13200-24000 V
 - D. 345000-161000 V
- 7. Most electric energy is generated at a voltage in the range of which values?**
- A. 2400 - 4160
 - B. 7200 - 12470
 - C. 13200 - 24000
 - D. 34500 - 161000
- 8. What is the primary function of a sectionalizer in a distribution feeder?**
- A. To reclose automatically after a fault
 - B. To monitor current and provide status
 - C. To isolate a faulted section to restore service quickly
 - D. To switch power between feeder sections
- 9. What is the purpose of placing a jumper across a live conductor before making a cut?**
- A. Installing a jumper across an open point will keep the current flowing
 - B. It keeps the potential across the cut at zero volts
 - C. It protects the lineman
 - D. All the above
- 10. A 200KVA transformer with a primary voltage rating of 7620 V would have _____ polarity.**
- A. Subtractive
 - B. Additive
 - C. Negative
 - D. Positive

Answers

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

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Explanations

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1. Which option best describes the domain where 230 kV is commonly applied?

- A. Distribution Systems
- B. Transmission Systems**
- C. Industrial Customer Systems
- D. Generation Systems

Moving electric power efficiently over long distances requires high voltage with lower current. 230 kV is a typical high-voltage level used to transmit bulk power from generating sites to substations that feed regional networks. At generation, voltages are stepped up to these transmission levels, then stepped down for distribution to customers at much lower voltages. Distribution systems deliver to homes and businesses at low voltages, and generation-focused equipment centers around stepping voltages up or down for transport, not long-distance grid-wide transmission. Hence, 230 kV is best described as part of transmission systems.

2. Protective relays in substations detect faults to trip breakers. Which faults are they most commonly recognizing?

- A. short circuits and grounds**
- B. damaged poles
- C. defective hardware
- D. broken strands

Protective relays are tuned to notice abnormal electrical conditions and trip breakers to isolate faults before damage spreads. The faults they most readily recognize are short circuits and ground faults because these produce abrupt, large changes in current and voltage that relays can detect quickly. A short circuit between conductors creates a very high current, while a ground fault causes current to flow to earth, upsetting current balance and voltage patterns. In both cases the protective circuits trip to protect equipment and maintain system stability. The other issues listed aren't electrical faults that relays primarily identify. Damaged poles are a structural problem, and while they can lead to electrical faults, relays measure electrical signals rather than physical conditions. Defective hardware or broken strands relate to equipment condition and failure modes, not the immediate electrical signature the protection system is designed to sense.

3. For a transformer with primary 2400 V and secondary 4160 V, if the primary is supplied with 2400 V, the secondary voltage is:

- A. 120 V
- B. 240 V
- C. 2400 V
- D. 4160 V**

Voltage scales with the turns ratio in an ideal transformer. The secondary voltage equals the primary voltage multiplied by the turns ratio (N_s/N_p). For this transformer, the ratio is $4160/2400 \approx 1.733$. So applying 2400 V to the primary yields about 4160 V on the secondary. In real operation, small losses and regulation can cause minor differences, but the nominal secondary voltage follows the turns ratio.

4. Which statement about transmission lines is true?

- A. They are always overhead
- B. They can be overhead or underground**
- C. They are always underground
- D. They cannot be buried

Transmission lines can be installed either overhead on towers or buried as underground cables. The choice depends on factors like cost, right-of-way, reliability, and environmental or urban constraints. Overhead lines are common because they're cheaper to install and easier to repair, but they need space, can be affected by weather, and are visually intrusive. Underground lines avoid weather exposure and reduce visual impact, but cost more and are harder to install and fault-find. Since both methods are used in practice, the true statement is that transmission lines can be overhead or underground. The other options—always overhead, always underground, or cannot be buried—aren't accurate.

5. One gigawatt equals how many megawatts?

- A. 100MW
- B. 1000MW**
- C. 10MW
- D. 10000MW

Power unit scales: giga- and mega- prefixes determine how many watts are in a gigawatt or a megawatt. Giga- means 10^9 and mega- means 10^6 , so 1 gigawatt equals 10^9 watts and 1 megawatt equals 10^6 watts. Dividing gives $10^9 / 10^6 = 10^3$, which is 1,000. So 1 gigawatt equals 1,000 megawatts. In practical terms, that means 100 MW is 0.1 GW, 10 MW is 0.01 GW, and 10,000 MW is 10 GW.

6. Which voltage range is typical for generating electric energy?

- A. 100-200 V
- B. 1000-2000 V
- C. 13200-24000 V**
- D. 345000-161000 V

Generating electric energy is typically done at medium voltages, not at the very low household level or the very high transmission levels. The generator's output is designed to be high enough to keep currents (and thus losses) reasonable, but not so high that insulation and machinery become impractical. In many plants the generator produces roughly 10 to 25 kilovolts, which corresponds to about 13,200 to 24,000 volts. This is the range where generators are commonly designed to operate before a step-up transformer boosts the voltage for transmission. The 100-200 V range is what you'd see at end-use locations or small equipment, not generation. A range around 1,000-2,000 V is atypical for generator outputs in modern plants, though some older or special setups might be different. The very high range (hundreds of kilovolts) is used for transmission after the voltage is stepped up, not the generator's own output. So the 13,200–24,000 V range best matches typical generator output.

7. Most electric energy is generated at a voltage in the range of which values?

- A. 2400 - 4160
- B. 7200 - 12470
- C. 13200 - 24000**
- D. 34500 - 161000

Electric energy is produced at moderate voltages and then stepped up for transmission. Generators are designed to produce a voltage that's high enough to keep currents manageable, but not so high that insulation and equipment become impractical. That balance places generation commonly in the mid-teens to mid-twenties of kilovolts. In practice, many generators produce around 13.2 to 24 kV, which is then stepped up by transformers to much higher transmission voltages for efficient long-distance delivery. That's why the range of 13.2 to 24 kV best fits where most generation occurs. The other ranges are typical of distribution or high-voltage transmission, not generation itself.

8. What is the primary function of a sectionalizer in a distribution feeder?

- A. To reclose automatically after a fault
- B. To monitor current and provide status
- C. To isolate a faulted section to restore service quickly**
- D. To switch power between feeder sections

Isolating the faulted section to restore service quickly is what sectionalizers are designed to do. They are placed along a distribution feeder to divide it into sections, and after a fault is cleared by the upstream protection, the sectionalizer opens to separate the faulted segment from the rest of the feeder. This minimizes the number of customers affected by a fault, since the remainder of the feeder stays energized while only the faulty section is taken out of service. Unlike a recloser, which automatically closes back after interrupting a fault, a sectionalizer does not reclose. It may monitor current to help detect faults, but its primary purpose is to isolate the faulted section, not to switch power between feeder parts.

9. What is the purpose of placing a jumper across a live conductor before making a cut?

- A. Installing a jumper across an open point will keep the current flowing
- B. It keeps the potential across the cut at zero volts
- C. It protects the lineman
- D. All the above**

Shorting the gap with a jumper creates a low-impedance path around the opening, so the two sides of the point remain at the same electrical potential. This serves three connected purposes. First, it keeps current flow through the line intact by bypassing the opening, so the circuit remains energized downstream rather than collapsing at the cut. Second, it reduces the voltage difference across the cut, keeping the exposed ends near zero volts and preventing a dangerous arc or shock when the worker makes the cut. Third, it enhances safety by containing energy in the jumper path and minimizing arcing or unexpected energization at the work site. For all these reasons, using a jumper across the live point is a protective practice that addresses both the electrical behavior of the line and the lineman's safety.

10. A 200KVA transformer with a primary voltage rating of 7620 V would have _____ polarity.

- A. Subtractive
- B. Additive**
- C. Negative
- D. Positive

Understanding transformer polarity comes from how the windings are oriented relative to each other. Each winding has a marked polarity with a dot at the end that stays in phase with the other winding when voltages are applied. When the ends marked with the dots are connected in the same direction, the voltages add together in series. This is called additive polarity. For a transformer with a high-voltage primary like 7620 V, the windings are typically arranged so that the primary and secondary voltages align in the same phase, so they add when connected in series rather than oppose each other. Subtractive polarity would occur if the windings were oriented so that their voltages oppose each other in series, yielding a smaller total voltage. Positive and negative aren't the standard terms used to describe this phase relationship in this context; the key distinction is additive versus subtractive based on how the windings' polarities line up.

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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://linemanstestc.examzify.com>

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

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