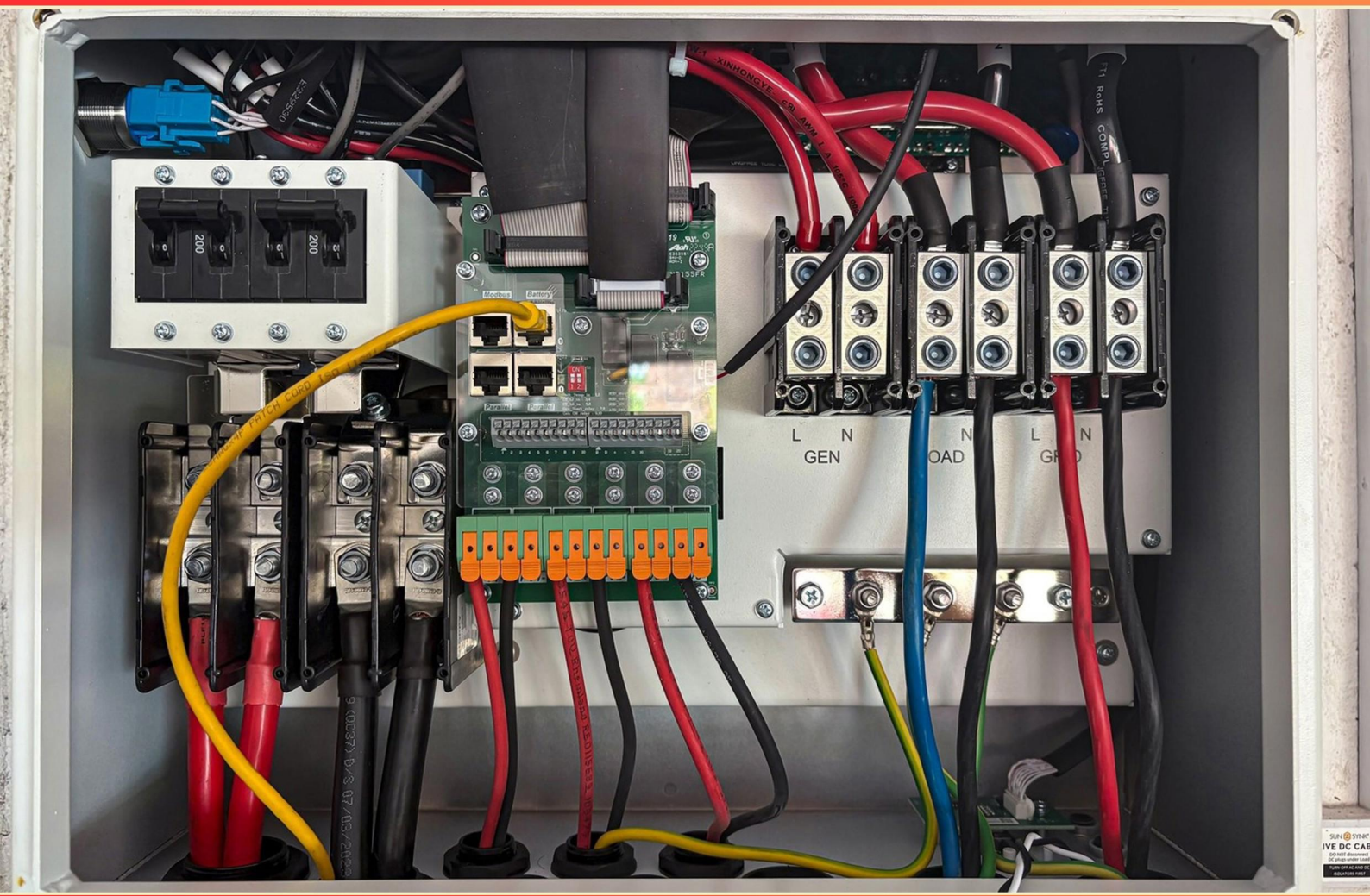
SASKATCHEWAN POLYTECH INTRODUCTORY ELECTRICAL THEORY AND PRACTICES EXAM PRACTICE (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

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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.

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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!

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Questions

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1. In a series circuit with R1 = 4 Ω and R2 = 6 Ω connected to a 24 V source, what is the total resistance and the current in the circuit?

A. R_total = 14 Ω; I = 1.71 A

B. R_total = 10 Ω; I = 2.4 A

C. R_total = 4 Ω; I = 6 A

D. R_total = 24 Ω; I = 1 A

2. Which phenomenon is the triboelectric effect most closely related to among the following?

A. Piezoelectric effect

B. Triboelectric effect

C. Electromagnetic Induction

D. Magnetoelectric effect

3. Which describes the standard schematic symbols for resistor, capacitor, inductor, and diode?

A. Resistor: zigzag; Capacitor: two parallel plates; Inductor: coil; Diode: triangle with a line.

B. Resistor: straight line; Capacitor: curved plates; Inductor: loops; Diode: rectangle.

C. Resistor: zigzag; Capacitor: one plate; Inductor: coil; Diode: diode symbol with a bar.

D. Resistor: zigzag; Capacitor: two parallel plates; Inductor: coil; Diode: triangle with a line.

4. If the resistance of a circuit decreases, what happens to the power dissipated by the circuit?

A. Increases

B. Decreases

C. Stays the same

D. Depends on voltage

5. Who Publishes Changes and additions to CEC in SK

A. SaskPower TSASK

B. Sask Power

C. Government of Saskatchewan

D. Saskatchewan Electrical Board

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6. The product of EMF, Current, and time is _____.

A. Power

B. Energy

C. Work

D. Charge

7. In electrical grounding, what is the purpose of protective earth (PE) and bonding?

A. Provide a low-impedance fault path and ensure exposed conductors are at the same potential.

B. Increase system voltage and reduce current.

C. Isolate equipment from ground and prevent current flow.

D. Improve EMI performance.

8. In Saskatchewan, who is responsible for supervising an apprentice's on-the-job training hours?

A. The regulator

B. Qualified journeyperson

C. The apprentice themselves

D. Unsupervised coworker

9. Which factor among the seven affecting electric shock specifically describes the path the current takes through the body?

A. Path of current through Body

B. AC or DC

C. Voltage

D. Length of time body is energized

10. What is the resonance frequency formula for a series RLC circuit and how is f0 expressed?

A. $\omega_0 = 1/\sqrt{(LC)}$; $f_0 = \omega_0/(2\pi)$

B. $\omega_0 = 1/\sqrt{(LC)}$; $f_0 = 1/(2\pi\sqrt{(LC)})$

C. $\omega_0 = 1/(2\pi\sqrt{(LC)})$; $f_0 = 1/\sqrt{(LC)}$

D. $f_0 = 2\pi\sqrt{(LC)}$; $\omega_0 = 1/\sqrt{(LC)}$

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Answers

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

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Explanations

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1. In a series circuit with R1 = 4 Ω and R2 = 6 Ω connected to a 24 V source, what is the total resistance and the current in the circuit?

A. R_total = 14 Ω; I = 1.71 A

B. R_total = 10 Ω; I = 2.4 A

C. R_total = 4 Ω; I = 6 A

D. R_total = 24 Ω; I = 1 A

In a series circuit, resistances simply add together and the same current flows through every component. So you combine the two resistances: 4 Ω plus 6 Ω equals 10 Ω for the total resistance. With a 24 V source, the current is found using Ohm's law: I = V / R, so I = 24 V / 10 Ω = 2.4 A. Therefore, the total resistance is 10 Ω and the current in the circuit is 2.4 A.

2. Which phenomenon is the triboelectric effect most closely related to among the following?

A. Piezoelectric effect

B. Triboelectric effect

C. Electromagnetic Induction

D. Magnetoelectric effect

The idea being tested is how charges are generated from contact between materials, i.e., contact electrification. The triboelectric effect is exactly that kind of process: when two different materials touch and then separate, electrons transfer based on their tendency to gain or lose electrons, leaving one material positively charged and the other negatively charged. So, the closest phenomenon to the triboelectric effect is the same process itself—the triboelectric effect describes charge buildup from friction or contact between materials. The other options involve different mechanisms: the piezoelectric effect uses mechanical strain in certain crystals to produce charge, not just surface contact; electromagnetic induction requires a changing magnetic flux to induce voltage; and the magnetoelectric effect is about coupling between magnetic and electric properties in some materials.

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3. Which describes the standard schematic symbols for resistor, capacitor, inductor, and diode?

A. Resistor: zigzag; Capacitor: two parallel plates; Inductor: coil; Diode: triangle with a line.

B. Resistor: straight line; Capacitor: curved plates; Inductor: loops; Diode: rectangle.

C. Resistor: zigzag; Capacitor: one plate; Inductor: coil; Diode: diode symbol with a bar.

D. Resistor: zigzag; Capacitor: two parallel plates; Inductor: coil; Diode: triangle with a line.

The symbols shown are the ones commonly used in standard circuit diagrams for basic components. The resistor is drawn as a zigzag line, which is the traditional symbol many textbooks and lab schematics use to indicate resistance. The capacitor is depicted by two parallel plates, a simple and universal symbol for capacitors; note that a curved plate on one side would indicate a polarized electrolytic capacitor, which is a specific type. The inductor is shown as a coil, representing its magnetic-field behavior in circuits. The diode is represented by a triangle touching a vertical line, where the triangle marks the anode and the line the cathode, indicating the direction of conventional current flow. Other options mix in symbols that aren't the standard for these components in introductory schematics (for example, a straight-line resistor symbol or curved plates for a non-polarized capacitor, or a diode shown as a rectangle). That's why the described set is the best match to typical introductory symbols.

4. If the resistance of a circuit decreases, what happens to the power dissipated by the circuit?

A. Increases

B. Decreases

C. Stays the same

D. Depends on voltage

With a fixed voltage source, reducing resistance increases the power dissipated as heat. The key relation is P = V^2 / R. So when R gets smaller, P gets larger because the same supply voltage pushes more current through the resistor (I = V / R), and power depends on the product of voltage and current. For example, across 10 V, a resistor dropping from 20 Ω to 10 Ω changes the current from 0.5 A to 1 A, and the power from 5 W to 10 W. Thus the power increases as resistance decreases. The statement that it depends on voltage only applies if the voltage isn't fixed; with a constant voltage source, decreasing resistance raises power.

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5. Who Publishes Changes and additions to CEC in SK

A. SaskPower TSASK

B. Sask Power

C. Government of Saskatchewan

D. Saskatchewan Electrical Board

The question checks who is responsible for distributing Saskatchewan's updates to the Canadian Electrical Code. In Saskatchewan, SaskPower handles publishing the province's amendments and additions to the CEC, so electricians, inspectors, and instructors have access to the latest locally applicable requirements. The national code (the CEC) provides the base standard, while Saskatchewan may add specific changes, and SaskPower is the main conduit for sharing those SK-specific updates. The Government and the Saskatchewan Electrical Board oversee regulation and enforcement, but their roles aren't about publishing the code changes themselves; SaskPower is the source for the SK-published updates.

6. The product of EMF, Current, and time is _____.

A. Power

B. Energy

C. Work

D. Charge

Energy is the quantity you get when a voltage (EMF) drives a current for a period of time. Power in an electrical circuit is the rate at which energy is delivered, and that power is $P = V \times I$. If you multiply that power by the time t that the current flows, you get energy: $E = P \times t = V \times I \times t$. The units $V \times A \times s$ reduce to joules, the standard unit of energy. So the product of EMF, current, and time represents the amount of electrical energy transferred. Power would be only $V \times I$ (without time), and charge would be $I \times t$ (without EMF). Work and energy are closely related, but the straightforward interpretation here uses energy as the product V I t.

7. In electrical grounding, what is the purpose of protective earth (PE) and bonding?

A. Provide a low-impedance fault path and ensure exposed conductors are at the same potential.

B. Increase system voltage and reduce current.

C. Isolate equipment from ground and prevent current flow.

D. Improve EMI performance.

Protective earth and bonding are about safety: they create a low-impedance path for fault current and keep exposed metal parts at the same electrical potential. When a fault occurs, the protective earth conductor provides a direct route for fault current back to the source, so the overcurrent protection can detect the fault quickly and trip, clearing the fault before it can cause harm. Bonding ties together all exposed conductive parts and metallic enclosures so they share the same potential, which minimizes the voltage a person could experience if two differently energized surfaces are touched. Together, these practices reduce shock risk and improve fault-clearing performance. The other options don't describe these safety roles—they don't increase fault current capacity, establish a safe ground reference, isolate equipment, or directly relate to EMI.

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8. In Saskatchewan, who is responsible for supervising an apprentice's on-the-job training hours?

A. The regulator

B. Qualified journeyperson

C. The apprentice themselves

D. Unsupervised coworker

The main idea is who supervises an apprentice's on-the-job training hours in Saskatchewan. A qualified journeyperson is the person responsible for that supervision. They have earned journeyperson status and are authorized to mentor and oversee apprentices on the job site. Their duties include guiding tasks, teaching proper techniques, enforcing safety and quality standards, and verifying and recording the hours the apprentice works. The regulator sets the rules and oversees the program, but does not provide day-to-day supervision on the job. An apprentice can't supervise their own training, and a coworker without the necessary credentials wouldn't be able to properly supervise or assess the apprentice's progress.

9. Which factor among the seven affecting electric shock specifically describes the path the current takes through the body?

A. Path of current through Body

B. AC or DC

C. Voltage

D. Length of time body is energized

The factor being tested is where the electricity travels inside the body. The path the current takes through the body matters because it determines which tissues and organs are exposed to the current. If the current goes through the chest and heart, the risk of serious effects like irregular heartbeats or cardiac arrest is much higher than if it travels through a limb. So, even with the same voltage and exposure time, the outcome can be very different depending on the route the current takes. The type of current (AC vs DC) changes how the current behaves over time and the symptoms, but it doesn't define the route through the body. Voltage sets how strong the push is, while duration affects the total exposure, but neither specifies where the current travels.

10. What is the resonance frequency formula for a series RLC circuit and how is f0 expressed?

A. $\omega 0 = 1/\sqrt{(LC)}$; $f0 = \omega 0/(2\pi)$

B. $\omega 0 = 1/\sqrt{(LC)}$; $f0 = 1/(2\pi\sqrt{(LC)})$

C. $\omega 0 = 1/(2\pi\sqrt{(LC)})$; $f0 = 1/\sqrt{(LC)}$

D. $f0 = 2\pi\sqrt{(LC)}$; $\omega 0 = 1/\sqrt{(LC)}$

In a series RLC circuit, resonance occurs when the inductive and capacitive reactances cancel each other out, so XL equals XC. This gives $\omega L = 1/(\omega C)$, and solving for ω yields the angular resonance frequency $\omega 0 = 1/\sqrt{(LC)}$. The ordinary (cycle) frequency is f0, which relates to ω by $\omega = 2\pi f$, so $f0 = \omega 0/(2\pi) = 1/(2\pi\sqrt{(LC)})$. So the correct expression uses the angular frequency as $\omega 0 = 1/\sqrt{(LC)}$ and the resonance frequency as $f0 = 1/(2\pi\sqrt{(LC)})$. The other forms mix angular and ordinary frequency or place 2π in the wrong position, which leads to incorrect units or values.

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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://saskpolytechintroelec.examzify.com

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

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