

UNIVERSITY OF CENTRAL FLORIDA (UCF) PSC1121 PHYSICAL SCIENCE FINAL PRACTICE EXAM (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. According to kinetic theory, what is the relationship between average kinetic energy of gas molecules and temperature?**
 - A. Directly proportional
 - B. Inversely proportional
 - C. Independent
 - D. Exponential
- 2. What is the angular momentum of a planet moving on its orbit around the sun referred to?**
 - A. Rotational momentum
 - B. Linearized block momentum
 - C. Orbital momentum
 - D. Centrifugal momentum
- 3. What type of reaction occurs when bonds are formed, resulting in the release of energy?**
 - A. Endothermic reaction
 - B. Exothermic reaction
 - C. Reversible reaction
 - D. Catalytic reaction
- 4. What is the term for the temperature at which a substance changes from solid to liquid?**
 - A. Freezing point
 - B. Melting point
 - C. Boiling point
 - D. Sublimation point
- 5. What concept best describes the pursuit of truth in PSC1121?**
 - A. The scientific method established by Aristotle
 - B. The discovery of universal laws through collaboration
 - C. The scientific enterprise begun by Galileo Galilei
 - D. Empirical observation without theoretical basis

- 6. What is the typical result of wave interaction with solid barriers?**
- A. Complete absorption
 - B. Reflection only
 - C. The formation of new patterns
 - D. Wave elimination
- 7. Which type of energy is associated with the position of an object?**
- A. Kinetic energy
 - B. Thermal energy
 - C. Gravitational potential energy
 - D. Magnetic energy
- 8. What is the term for materials that prevent the flow of electricity?**
- A. Conductors
 - B. Insulators
 - C. Semiconductors
 - D. Transistors
- 9. What is the process by which plants convert sunlight into chemical energy?**
- A. Respiration
 - B. Photosynthesis
 - C. Transpiration
 - D. Fermentation
- 10. What is the unit of measure for frequency in the International System of Units (SI)?**
- A. Joule (J)
 - B. Hertz (Hz)
 - C. Newton (N)
 - D. Pascal (Pa)

Answers

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

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Explanations

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1. According to kinetic theory, what is the relationship between average kinetic energy of gas molecules and temperature?

- A. Directly proportional
- B. Inversely proportional
- C. Independent
- D. Exponential

The relationship between the average kinetic energy of gas molecules and temperature, as described by kinetic theory, is directly proportional. This means that as the temperature of a gas increases, the average kinetic energy of its molecules also increases. Kinetic theory posits that temperature is a measure of the thermal energy of the gas particles. When the temperature rises, the molecules gain more energy and move faster, leading to an increase in their average kinetic energy. This relationship is critical because it helps explain many gas laws and behaviors, such as those governing pressure and volume changes in gases during heating or cooling processes. Understanding this direct proportionality is essential for grasping the fundamental principles of thermodynamics and the behavior of gases in various physical situations.

2. What is the angular momentum of a planet moving on its orbit around the sun referred to?

- A. Rotational momentum
- B. Linearized block momentum
- C. Orbital momentum
- D. Centrifugal momentum

The angular momentum of a planet moving in its orbit around the sun is specifically referred to as "orbital momentum." This term describes the momentum associated with an object's rotation around a central point due to gravitational forces. In the context of celestial mechanics, the angular momentum of a planet is a product of its mass, velocity, and the radius of its orbit, and it helps explain how the planet moves along its elliptical path. The concept of orbital momentum incorporates both the mass of the planet and its motion through space, highlighting the influence of gravitational forces exerted by the sun. As the planet moves closer to or farther from the sun in its elliptical orbit, its angular momentum remains conserved, which is a principle resulting from the conservation of angular momentum in a closed system. Understanding this concept is crucial for grasping how planetary bodies interact and maintain their orbits over time.

3. What type of reaction occurs when bonds are formed, resulting in the release of energy?

- A. Endothermic reaction
- B. Exothermic reaction
- C. Reversible reaction
- D. Catalytic reaction

A reaction in which bonds are formed and energy is released is classified as an exothermic reaction. When chemical bonds are created, the system typically releases energy, often in the form of heat, to the surroundings. This release of energy is a hallmark of exothermic processes. In a broader context, during exothermic reactions, the total energy of the products is lower than the total energy of the reactants because energy is released when new bonds are formed. Common examples of exothermic reactions include combustion reactions (like burning fuels) and certain condensation processes. Other types of reactions, like endothermic reactions, absorb energy instead of releasing it. Reversible reactions can go both ways, meaning they can absorb or release energy depending on the direction, while catalytic reactions involve the presence of a catalyst to lower the activation energy, but they do not inherently involve the release of energy in the bond formation process.

4. What is the term for the temperature at which a substance changes from solid to liquid?

- A. Freezing point
- B. Melting point**
- C. Boiling point
- D. Sublimation point

The temperature at which a substance transitions from a solid state to a liquid state is referred to as the melting point. This is the specific temperature at which the molecular structure of a solid breaks down sufficiently for it to flow as a liquid. At the melting point, the solid and liquid phases of a substance exist in equilibrium, allowing for the conversion between the two states. In solid form, the particles are tightly packed in a structured arrangement. When the temperature rises to the melting point, the energy supplied to the substance increases the kinetic energy of the particles, eventually overcoming the forces that hold them together in the solid state. This transition is essential in various contexts, including understanding material properties, phase changes, and thermal dynamics. Other terms provided in the choices refer to different processes. The freezing point is the temperature at which a liquid turns into a solid and is usually the same value as the melting point, but it describes the reverse process. The boiling point is the temperature at which a liquid turns into a gas, while the sublimation point relates to the direct transition from solid to gas without passing through the liquid phase. Thus, the choice of melting point accurately captures the process of solid to liquid transformation.

5. What concept best describes the pursuit of truth in PSC1121?

- A. The scientific method established by Aristotle
- B. The discovery of universal laws through collaboration
- C. The scientific enterprise begun by Galileo Galilei**
- D. Empirical observation without theoretical basis

The concept that best describes the pursuit of truth in PSC1121 is the scientific enterprise begun by Galileo Galilei. Galileo played a crucial role in the development of the scientific method, emphasizing observation, experimentation, and the importance of evidence in forming conclusions about the natural world. This approach laid the foundational principles of modern science, encouraging a systematic way to acquire knowledge through careful observation and testing of hypotheses. While other options touch on aspects of scientific inquiry, such as Aristotle's contributions to logic and universal laws through collaboration, they do not encapsulate the broader approach to empirical evidence and systematic investigation that is epitomized by Galileo's work. His advocacy for experimentation and skepticism towards untested theories shaped the framework that is central to the scientific method employed today. Thus, his influence is key in demonstrating how scientific pursuits aim to uncover truth through careful and methodical investigation.

6. What is the typical result of waving interaction with solid barriers?

- A. Complete absorption
- B. Reflection only
- C. The formation of new patterns**
- D. Wave elimination

When waves encounter solid barriers, they can indeed lead to the formation of new patterns. This is primarily due to the processes of reflection and diffraction that occur when waves interact with obstacles. When a wave hits a solid barrier, part of the wave can be reflected back, while certain conditions may allow for changes in wave patterns, particularly when considering wave interference and diffraction. If the solid barrier has openings or if the waves interact in a complex environment, new patterns can emerge. For instance, if two waves collide after reflecting off a barrier, they can interfere constructively or destructively, creating an entirely new wave pattern. Thus, in the context of this question, the formation of new patterns is a typical result of the interaction of waves with solid barriers, as waves can combine and alter their paths in various ways upon contact.

7. Which type of energy is associated with the position of an object?

- A. Kinetic energy
- B. Thermal energy
- C. Gravitational potential energy**
- D. Magnetic energy

Gravitational potential energy is the type of energy that is directly linked to an object's position, specifically its height above a reference point, typically the ground. This energy results from the gravitational force acting on an object due to its elevation. The formula for gravitational potential energy is $PE = mgh$, where m is the mass of the object, g is the acceleration due to gravity, and h is the height of the object above the reference point. In contrast, kinetic energy refers to the energy of motion and is dependent on both the mass and the speed of an object. Thermal energy is associated with the temperature of an object and is related to the kinetic energy of its particles, often due to heat. Magnetic energy relates to the energy stored in magnetic fields or produced by magnetic forces and does not depend on the object's position in the same way that gravitational potential energy does. Understanding gravitational potential energy helps clarify how energy can change forms based on an object's location in a gravitational field, such as when an object is lifted higher, increasing its potential energy.

8. What is the term for materials that prevent the flow of electricity?

- A. Conductors
- B. Insulators**
- C. Semiconductors
- D. Transistors

The term for materials that prevent the flow of electricity is insulators. Insulators are substances that do not easily permit the flow of electric charges, which makes them essential for protecting us from electric currents and for ensuring that electrical circuits function properly without short-circuiting. Common examples of insulators include rubber, glass, and certain plastics, which are widely used in electrical cables and devices to encase conductive materials and enhance safety. In contrast, conductors allow the flow of electricity with little resistance, making materials like copper and aluminum suitable for wiring. Semiconductors have properties between those of insulators and conductors, allowing them to conduct electricity under certain conditions, which is crucial for modern electronics such as computers and diodes. Transistors, on the other hand, are semiconductor devices that can amplify or switch electronic signals, but they do not directly describe a class of materials that prevent electricity flow.

9. What is the process by which plants convert sunlight into chemical energy?

- A. Respiration
- B. Photosynthesis**
- C. Transpiration
- D. Fermentation

The process by which plants convert sunlight into chemical energy is called photosynthesis. During this process, plants take in carbon dioxide from the air and water from the soil. Using the energy from sunlight, specifically from chlorophyll in their leaves, they convert these raw materials into glucose (a type of sugar) and oxygen. The primary chemical equation for photosynthesis can be summarized as: carbon dioxide plus water, in the presence of sunlight, yields glucose and oxygen. Photosynthesis is crucial for life on Earth because it not only provides energy in the form of glucose for the plant itself but also produces oxygen that is essential for the survival of most living organisms. This process occurs mainly in the chloroplasts of plant cells and is fundamental to the food chain, enabling plants to serve as the primary producers in ecosystems. This option stands out as the definition and significance of photosynthesis align perfectly with the question of how plants harness sunlight to create energy in a chemical form.

10. What is the unit of measure for frequency in the International System of Units (SI)?

- A. Joule (J)
- B. Hertz (Hz)**
- C. Newton (N)
- D. Pascal (Pa)

The unit of measure for frequency in the International System of Units (SI) is Hertz (Hz). Frequency represents the number of cycles or events that occur in a unit of time, specifically one second. Thus, one Hertz indicates one cycle per second. This unit is crucial in various fields such as physics, engineering, and telecommunications, where understanding the rate at which events occur is essential. Other options are units associated with different physical quantities: Joules measure energy, Newtons measure force, and Pascals measure pressure. Each of these plays a unique role in physical science, but they do not measure frequency. Hertz specifically relates to the concept of periodicity and oscillation, making it the appropriate and correct answer for frequency measurement in the SI system.

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://ucf-psc1121-final.examzify.com>

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

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