

PSIA SCIENCE PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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 constellation contains the star Deneb?**
 - A. Orion
 - B. Cygnus
 - C. Leo
 - D. Sagittarius

- 2. What phase of a heavenly body has less than one half of its lighted portion visible?**
 - A. Full phase
 - B. Quarter phase
 - C. Crescent phase
 - D. Gibbous phase

- 3. What term refers to the layer of the sun's atmosphere that gives it color?**
 - A. Chromosphere
 - B. Photosphere
 - C. Corona
 - D. Exosphere

- 4. What is the effect called when a liquid changes into a vapor at any temperature?**
 - A. Evaporation
 - B. Vaporization
 - C. Condensation
 - D. Freezing

- 5. What term describes the amount of disorder in a system?**
 - A. Chaos
 - B. Entropy
 - C. Equilibrium
 - D. Negentropy

6. What is defined as the ability to do work?

- A. Power
- B. Energy
- C. Force
- D. Work rate

7. What is the field of science that studies stars, planets, and other celestial bodies?

- A. Astrobiology
- B. Astronomy
- C. Geology
- D. Cosmology

8. What characterizes escape velocity?

- A. It is required for entering orbit.
- B. It is the speed needed to break free from gravitational pull.
- C. It is the maximum speed of an object in free fall.
- D. It varies based on the mass of the object.

9. What celestial body is responsible for influencing ocean tides on Earth?

- A. The Sun
- B. The Moon
- C. Mars
- D. Jupiter

10. What is the name of the second brightest star in the constellation Gemini?

- A. Pollux
- B. Castor
- C. Procyon
- D. Sirius

Answers

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

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Explanations

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1. What constellation contains the star Deneb?

- A. Orion
- B. Cygnus**
- C. Leo
- D. Sagittarius

The star Deneb is located in the constellation Cygnus, which is also known as the Swan. Deneb is one of the brightest stars in the night sky and serves as a key point in the asterism known as the Northern Cross. It is classified as a blue supergiant star, and its name is derived from an Arabic word meaning "tail," as it represents the tail of the swan in the constellation's depiction. Cygnus is particularly prominent during the summer months in the Northern Hemisphere and is well-known among both amateur and professional astronomers. It is part of the Milky Way and can be easily identified due to the shape formed by its pattern of stars. Its position and brightness make it a critical reference point for navigation in the night sky. In contrast, the other constellations mentioned—Orion, Leo, and Sagittarius—do not contain Deneb, as they are distinct formations with their own notable stars and characteristics.

2. What phase of a heavenly body has less than one half of its lighted portion visible?

- A. Full phase
- B. Quarter phase
- C. Crescent phase**
- D. Gibbous phase

The phase of a heavenly body that has less than one half of its lighted portion visible is known as the crescent phase. During this phase, the illuminated part of the celestial body, such as the Moon, appears as a thin sliver or crescent shape. This occurs when the Sun's light is only partially illuminating the body, resulting in less than half being visible from a specific vantage point, such as Earth. In contrast, the full phase represents the condition where the entire lighted side is visible, and the gibbous phase is when more than half but not all of the surface is illuminated. The quarter phase involves half of the lighted portion being visible, typically characterized by the Moon being at a right angle relative to the Earth and Sun. These distinct characteristics of lunar phases help in identifying their appearances accurately.

3. What term refers to the layer of the sun's atmosphere that gives it color?

- A. Chromosphere**
- B. Photosphere
- C. Corona
- D. Exosphere

The layer of the sun's atmosphere that gives it color is known as the chromosphere. This layer is situated above the photosphere and is where hydrogen gas becomes ionized and emits a reddish light. The chromosphere is typically visible during a solar eclipse as a thin red ring around the sun, showcasing its distinct coloration primarily due to the presence of hydrogen. Understanding the functions of other layers helps contextualize why they do not fit this definition. The photosphere, for instance, is the layer where sunlight is generated and is essentially the "surface" of the sun, appearing white or yellow. The corona is the outermost layer of the sun's atmosphere visible during a total solar eclipse, characterized by its pearly white color, which is not the source of the sun's color as associated with its appearance. The exosphere, while a term associated with atmospheric layers, pertains to Earth and is not relevant in the context of the sun's structure. Thus, the unique property of the chromosphere in providing color distinguishes it as the correct term.

4. What is the effect called when a liquid changes into a vapor at any temperature?

- A. Evaporation**
- B. Vaporization
- C. Condensation
- D. Freezing

The effect when a liquid changes into a vapor at any temperature is known as evaporation. This process occurs when molecules at the surface of the liquid gain enough energy to break free from the liquid and enter the gas phase, even if the overall temperature of the liquid is below its boiling point. Evaporation can take place at any temperature, which distinguishes it from vaporization, a broader term that encompasses both evaporation and boiling. Vaporization refers to the transition of a substance from a liquid state to a gaseous state, but it is typically associated with boiling, which occurs at a specific temperature. Condensation is the opposite process, where vapor cools and transitions back into a liquid. Freezing involves the change of a liquid into a solid when the temperature drops sufficiently. Thus, evaporation is specifically the phenomenon that occurs under a range of conditions, emphasizing its significance in understanding phase changes across temperatures.

5. What term describes the amount of disorder in a system?

- A. Chaos
- B. Entropy**
- C. Equilibrium
- D. Negentropy

The term that describes the amount of disorder in a system is entropy. Entropy is a fundamental concept in thermodynamics and statistical mechanics, reflecting the level of randomness or disorganization present in a system. It helps to quantify the distribution of energy and how dispersed it is among the available states, with higher entropy indicating greater disorder. In thermodynamic processes, systems tend to evolve toward a state of higher entropy, also known as the second law of thermodynamics, which states that in an isolated system, the total entropy can only stay the same or increase over time. This concept is critical in understanding processes like energy transfer, phase changes, and chemical reactions, as it governs the natural direction of these phenomena. While chaos and equilibrium pertain to order and stability in systems, they do not specifically measure disorder. Negentropy, on the other hand, refers to the process of reducing entropy and thus increasing order, which is the opposite of measuring disorder. This context highlights why the concept of entropy is central to understanding the behavior of systems from a scientific perspective.

6. What is defined as the ability to do work?

- A. Power
- B. Energy**
- C. Force
- D. Work rate

The correct choice is energy, which is fundamentally defined as the capacity to perform work. In physics, work is accomplished when a force is applied over a distance, and energy is the measurable quantity that allows this process to occur. Energy can take various forms, such as kinetic, potential, thermal, and chemical, but in all cases, it is the underlying factor that enables work to be done. In the context of the other options, power refers to the rate at which work is done or energy is transferred over time, not the actual capacity to do work itself. Force is the influence that causes an object to undergo a change in motion, which is necessary for work to be performed but does not itself represent the ability to perform that work. Work rate is similar to power and also indicates the speed at which work is performed. Therefore, while these other terms are related to work, energy is the correct answer as it directly represents the ability to do work.

7. What is the field of science that studies stars, planets, and other celestial bodies?

- A. Astrobiology
- B. Astronomy**
- C. Geology
- D. Cosmology

The field of science that focuses on the study of stars, planets, and other celestial bodies is astronomy. This branch of science encompasses the observation and analysis of celestial objects and phenomena outside Earth's atmosphere. It includes the study of the formation, evolution, and behavior of these bodies, such as their composition, structure, and motion. Astronomy also encompasses various sub-disciplines, including astrophysics, which applies the principles of physics to understand celestial phenomena. This makes astronomy a broad and rich field that plays a crucial role in our understanding of the universe. In contrast, astrobiology deals with the study of the potential for life elsewhere in the universe, geology focuses on the Earth and its processes, and cosmology examines the origin and evolution of the universe as a whole. Each of these fields has a specific focus, but astronomy is uniquely dedicated to the observation and analysis of celestial bodies.

8. What characterizes escape velocity?

- A. It is required for entering orbit.
- B. It is the speed needed to break free from gravitational pull.**
- C. It is the maximum speed of an object in free fall.
- D. It varies based on the mass of the object.

Escape velocity is characterized as the speed needed to break free from gravitational pull. This concept refers to the minimum velocity an object must achieve in order to overcome the gravitational force of a celestial body, such as Earth, without any additional propulsion. At this speed, the kinetic energy of the object equals the gravitational potential energy that binds it to the body, allowing it to continue moving away into space indefinitely. Entering orbit requires a specific velocity that is different from escape velocity; an object in orbit is essentially falling towards the planet but moving forward fast enough to miss it, which doesn't necessarily involve breaking free from gravitational pull. Therefore, defining escape velocity in terms of orbital velocity is inaccurate. The maximum speed of an object in free fall isn't synonymous with escape velocity either. An object in free fall accelerates towards the surface of a celestial body under the influence of gravity until it reaches terminal velocity, which is determined by other factors like air resistance, not the escape velocity. Regarding the mass of the object, escape velocity is independent of the object's mass. It primarily depends on the mass and radius of the celestial body from which the escape is being attempted. Therefore, the assertion that escape velocity varies based on the mass of the object is not accurate. The correct understanding emphasizes that

9. What celestial body is responsible for influencing ocean tides on Earth?

- A. The Sun
- B. The Moon**
- C. Mars
- D. Jupiter

The Moon is the primary celestial body that influences ocean tides on Earth due to its gravitational pull. Tides occur as a result of the interaction between the gravitational forces exerted by the Moon and the Earth. As the Moon orbits Earth, its gravity pulls on the water in the oceans, creating bulges, leading to high tides in the areas of the Earth closest to the Moon. Conversely, areas that are perpendicular to the moon experience low tides. While the Sun also has a gravitational effect on tides and can influence them, it is the Moon that has a more significant impact due to its proximity to Earth. This is why the Moon is recognized as the key player in the tidal patterns observed on our planet.

10. What is the name of the second brightest star in the constellation Gemini?

- A. Pollux
- B. Castor**
- C. Procyon
- D. Sirius

The second brightest star in the constellation Gemini is Pollux, while Castor is the brightest star in the constellation. Pollux, also known as Beta Geminorum, is a giant star located approximately 34 light-years from Earth and is notable for its brightness and its yellow-orange hue, which distinguishes it from its counterpart, Castor, which is actually a binary star system and does not shine as brightly as Pollux. Understanding star classifications and their brightness can help clarify why Pollux takes its place in terms of brightness within Gemini, allowing for a deeper appreciation of the celestial specifics pertaining to this constellation.

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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://psiascience.examzify.com>

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

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