Georgia High School Physical Science EOC Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

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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

1. Which term describes energy from nuclear fission and fusion?

A. Mechanical Energy

B. Thermonuclear Energy

C. Photoelectric Energy

D. Electromagnetic Energy

2. Which term describes a homogeneous mixture that appears uniform?

A. Not uniform mixture

B. A pure substance

C. Solution

D. Element plus compound

3. In a closed system, which statement about energy is true?

A. Energy vanishes in closed systems

B. Energy cannot be created or destroyed, only transformed

C. Energy can be created in closed systems

D. Energy cannot be transferred in closed systems

4. Which EM wave has the highest energy?

A. Radio waves

B. Infrared

C. Gamma rays

D. Visible light

5. Which circuit has multiple paths for current, and can still allow current if one path is obstructed?

A. Open Circuit

B. Parallel Circuit

C. Series Circuit

D. Static Electricity

6. Which term describes electricity from light?

A. Mechanical Energy

B. Thermonuclear Energy

C. Photoelectric Energy

D. Electromagnetic Energy

7. Which of the following is a polyatomic ion?

A. NH_4^+

B. Na^+

C. Cl^-

D. Fe^{2+}

8. Electricity travels from ____ potential to ____ potential.

A. From low to high

B. From equal to equal

C. From high to low

D. From low to low

9. Which statement describes the solvent in a solution?

A. The substance dissolved

B. The dissolving medium

C. A pure substance

D. A mixture

10. Which term describes energy from nuclear reactions in the nucleus?

A. Electromagnetic Energy

B. Conductors

C. Thermonuclear Energy

D. Insulators

Answers

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

Explanations

1. Which term describes energy from nuclear fission and fusion?

A. Mechanical Energy

B. Thermonuclear Energy

C. Photoelectric Energy

D. Electromagnetic Energy

Energy released from changes in the nucleus during fission or fusion is described as thermonuclear energy. When a heavy nucleus splits or light nuclei fuse, some mass is converted to energy according to E=mc^2, and this energy usually appears as heat and kinetic energy in the reacting system. The term thermonuclear emphasizes the extremely high temperatures involved in these nuclear reactions, especially fusion, and it is used to describe the energy released in such processes. The other terms don't fit because mechanical energy is about motion or position, the photoelectric term relates to electrons being ejected by light, and electromagnetic energy refers to energy carried by electromagnetic waves rather than energy from changes in the nucleus.

2. Which term describes a homogeneous mixture that appears uniform?

A. Not uniform mixture

B. A pure substance

C. Solution

D. Element plus compound

A solution is a homogeneous mixture that appears uniform. In a solution, the substance that dissolves (the solute) is distributed evenly within the substance doing the dissolving (the solvent) at the molecular level, so any sample looks the same throughout. Salt in water or sugar in tea are classic examples you can see or test for yourself. Not uniform mixtures have visible different parts, like a salad or pepper scattered in water, so they don't look the same throughout. A pure substance, while it can appear uniform, is not a mixture at all—it's made of only one kind of particle, either an element or a compound. The phrase "element plus compound" isn't a standard way to describe a single homogeneous mixture, so it doesn't fit the idea of a solution. Therefore, the term that best describes a homogeneous mixture that looks uniform is a solution.

3. In a closed system, which statement about energy is true?

A. Energy vanishes in closed systems

B. Energy cannot be created or destroyed, only transformed

C. Energy can be created in closed systems

D. Energy cannot be transferred in closed systems

Energy is conserved in a closed system: the total amount stays the same even as it changes form or moves across the system's boundaries. Energy can transfer as heat or work, and it can switch between forms like kinetic, potential, or chemical energy, but it isn't created or destroyed. That's why the statement that energy cannot be created or destroyed, only transformed, is true for a closed system. The other ideas would imply energy disappears or cannot move, which isn't consistent with how closed systems are defined.

4. Which EM wave has the highest energy?

A. Radio waves

B. Infrared

C. Gamma rays

D. Visible light

Energy per photon increases with frequency, so higher-frequency waves carry more energy per quantum. Among these options, gamma rays have the highest frequency (shortest wavelength), which means their photons have the most energy. The energy of a photon is given by E = hf (or E = hc/λ), so shorter wavelengths correspond to higher energy. Radio waves have the lowest frequency and thus the lowest energy per photon, infrared is higher, visible light is higher still, and gamma rays are the highest. Therefore, gamma rays have the highest energy.

5. Which circuit has multiple paths for current, and can still allow current if one path is obstructed?

A. Open Circuit

B. Parallel Circuit

C. Series Circuit

D. Static Electricity

When a circuit has more than one path for current, it is parallel. Each path runs directly from the power source back to the source, so the same voltage is across every branch. If one path becomes obstructed, the other paths still form complete loops and can carry current. In parallel, the current splits among the branches according to each branch's resistance, but the overall circuit keeps delivering current where the paths remain closed. This is different from a series circuit, which has only one path; if that path is interrupted, all current stops. An open circuit stops current because there's no complete loop, and static electricity isn't about continuous current flow in a circuit. So the scenario described—current continuing to flow despite one path being blocked—fits a parallel circuit.

6. Which term describes electricity from light?

A. Mechanical Energy

B. Thermonuclear Energy

C. Photoelectric Energy

D. Electromagnetic Energy

Electricity produced by light relies on the photoelectric effect: photons from light transfer their energy to electrons in a material, giving some electrons enough energy to escape and generate an electric current. The term that describes this light-to-electricity conversion is photoelectric energy. Mechanical energy is energy of motion or position, not tied to converting light into electricity. Thermonuclear energy comes from nuclear fusion, unrelated to light-induced electron emission. Electromagnetic energy is a broad category for energy carried by light and other fields, but it doesn't specify the process of producing electricity from light.

7. Which of the following is a polyatomic ion?

A. NH4+

B. Na+

C. Cl-

D. Fe2+

Polyatomic ions are charged units made of two or more atoms bonded together. Ammonium, NH4+, is a polyatomic ion because it has four hydrogens attached to one nitrogen and, as a whole, carries a +1 charge. The other options are monatomic ions, meaning they are single atoms with a charge: sodium in Na+ is just one sodium atom with a +1 charge; chlorine in Cl- is a single chlorine atom with a -1 charge; iron in Fe2+ is a single iron atom with a +2 charge. So the correct example of a polyatomic ion is ammonium.

8. Electricity travels from ____ potential to ____ potential.

A. From low to high

B. From equal to equal

C. From high to low

D. From low to low

Electric potential difference, or voltage, creates a push that drives charges. Conventional current flows from higher potential to lower potential because positive charges would lose potential energy as they move in that direction. So electricity travels from high to low potential. If you think in terms of electrons, they actually move from low to high potential, since they're negatively charged, but the standard description of current is from high to low.

9. Which statement describes the solvent in a solution?

A. The substance dissolved

B. The dissolving medium

C. A pure substance

D. A mixture

In a solution, the solvent is the dissolving medium. It's the component in which the other substance is dissolved and is usually present in the larger amount. For example, when you dissolve salt in water, water acts as the solvent while salt is the solute. This role defines the solvent, not its purity or its being a separate substance; the key idea is that the solvent is the medium that carries and dissolves the solute. A solution is a homogeneous mixture where the solute is uniformly distributed within the solvent, reinforcing why the statement "the solvent is the dissolving medium" best captures this relationship.

10. Which term describes energy from nuclear reactions in the nucleus?

A. Electromagnetic Energy

B. Conductors

C. Thermonuclear Energy

D. Insulators

The idea being tested is energy produced by nuclear reactions in the nucleus. Thermonuclear energy is the term for energy released in nuclear reactions that involve changes in the nucleus, especially fusion at very high temperatures. In fusion, small amounts of mass are converted into a large amount of energy according to E=mc^2, all coming from the nucleus's binding energy changes. This distinguishes it from chemical energy, which involves electrons and chemical bonds, and from electromagnetic energy, which refers to radiation like light rather than a nuclear process. Conductors and insulators are related to material properties, not a form of energy. So the term that best describes energy from nuclear reactions in the nucleus is thermonuclear energy.

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://gahighschoolphysicalscieoc.examzify.com

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