High School Physics 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. In a collision with no external forces, which quantity remains constant?

A. Conservation of Momentum

B. Conservation of Energy

C. Impulse

D. Elastic Potential Energy

2. Which force opposes motion between two surfaces that are in contact?

A. Friction

B. Normal Force

C. Work

D. Power

3. What energy is stored in a stretched or compressed object, such as a spring?

A. Kinetic Energy

B. Momentum

C. Elastic Potential Energy

D. Conservation of Energy

4. What is the highest point of a wave called?

A. Trough

B. Crest

C. Amplitude

D. Peak

5. Which property is the opposition to the flow of electric current in a material?

A. Voltage

B. Resistance

C. Capacitance

D. Inductance

6. Which term refers to the act of swinging back and forth with a steady rhythm?

A. Wave

B. Rotation

C. Oscillation

D. Motion

7. A force that can exist between objects even in the absence of physical contact.

A. Gravity

B. Field Force

C. Contact Force

D. Projectile Motion

8. Which term describes the bending of a wave as it passes at an angle from one medium to another?

A. Dispersion

B. Reflection

C. Absorption

D. Refraction

9. What term describes the measure of extra positive or negative particles in an object?

A. Mass

B. Charge

C. Energy

D. Potential

10. The bouncing back of a wave, such as light or sound, when it hits a surface it cannot pass through is called.

A. Absorption

B. Refraction

C. Reflection

D. Diffraction

Answers

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

Explanations

1. In a collision with no external forces, which quantity remains constant?

A. Conservation of Momentum

B. Conservation of Energy

C. Impulse

D. Elastic Potential Energy

When there are no external forces acting, the total momentum of the system must stay unchanged. During a collision, the forces that particles exert on each other are internal to the system, so they can transfer momentum between the bodies, but the sum of their momenta remains the same. Energy, however, can move between forms. In many collisions some kinetic energy is converted into deformation, heat, or sound, so the kinetic energy doesn't have to stay constant. Only in a perfectly elastic collision is kinetic energy conserved as well. So the quantity that is guaranteed to stay constant in this scenario is the momentum, while energy conservation depends on the specifics of the collision.

2. Which force opposes motion between two surfaces that are in contact?

A. Friction

B. Normal Force

C. Work

D. Power

Friction is the force that opposes motion between surfaces that are in contact. It acts parallel to the contact surface and points opposite to the direction of relative motion or the motion you're trying to cause. This is why pushing a book across a table feels like you're pushing against a resisting force—the friction is trying to keep the book from sliding. There are two kinds: static friction, which prevents motion up to a limit, and kinetic friction, which acts when surfaces slide against each other. The normal force, which is perpendicular to the surface, supports weight but does not oppose motion along the surface. Work and power describe energy transfer and rate of energy transfer, not a force that directly opposes motion.

3. What energy is stored in a stretched or compressed object, such as a spring?

A. Kinetic Energy

B. Momentum

C. Elastic Potential Energy

D. Conservation of Energy

Elastic potential energy is the energy stored when an object is stretched or compressed. When you deform a spring, you do work against its restoring force, and that work becomes stored as elastic potential energy in the spring. The amount stored grows with how stiff the spring and how far you deform it, described by $U = 1/2\ k\ x^2$ for an ideal spring. When the deformation is released, that stored energy can convert into kinetic energy as the spring moves back toward its natural length. This distinguishes it from kinetic energy, which is energy of motion, and from momentum, which is a property of moving objects; conservation of energy is the principle describing how energy changes form, not a type of energy itself.

4. What is the highest point of a wave called?

A. Trough

B. Crest

C. Amplitude

D. Peak

This question tests your understanding of wave terminology, specifically the extreme points of a wave. The highest point of a wave is called the crest, where the medium is displaced upward from its rest position. The lowest point is the trough, while the amplitude is the maximum displacement from rest to crest (or to trough). The word peak can be used in some contexts, but in physics the precise term for the top of a wave is crest. So the highest point of a wave is crest.

5. Which property is the opposition to the flow of electric current in a material?

A. Voltage

B. Resistance

C. Capacitance

D. Inductance

Opposition to the flow of electric current in a material is called resistance. It happens because moving electrons collide with atoms and imperfections in the material, turning some of the electrical energy into heat. The more collisions there are, the higher the resistance. Temperature affects this too—heating a conductor usually increases its resistance. For a given material at a fixed temperature, resistance depends on length and cross-sectional area: longer wires resist more, while thicker wires resist less. Ohm's law ties it all together: current equals voltage divided by resistance (I = V/R). So, for a given voltage, larger resistance means smaller current. The other terms describe different ideas—voltage is the driving push, capacitance relates to storing charge, and inductance resists changes in current—so they aren't the steady opposition to flow that resistance represents.

6. Which term refers to the act of swinging back and forth with a steady rhythm?

A. Wave

B. Rotation

C. Oscillation

D. Motion

Oscillation describes back-and-forth motion around an equilibrium position in a regular cycle. When something swings, like a pendulum, it moves away from and toward the center repeatedly, producing a steady rhythm. A wave is a traveling disturbance through a medium, rotation is spinning around an axis, and motion is any change in position. So the term that fits swinging back and forth with a steady rhythm is oscillation.

7. A force that can exist between objects even in the absence of physical contact.

A. Gravity

B. Field Force

C. Contact Force

D. Projectile Motion

The main idea here is non-contact forces—forces that can act between objects without touching. Such forces arise from fields that permeate space, allowing interaction at a distance. Field forces describe this general mechanism. Gravity is a concrete example of a field force: two masses attract each other even when not in contact, because the gravitational field mediates the interaction. So this option is the best answer because it names the broad concept that covers non-contact interactions, with gravity as a specific instance. The other options don't fit: a contact force requires physical contact, and projectile motion is a description of motion, not a force.

8. Which term describes the bending of a wave as it passes at an angle from one medium to another?

A. Dispersion

B. Reflection

C. Absorption

D. Refraction

When a wave crosses from one medium into another at an angle, its speed changes because the two media support different speeds for the wave. This change in speed causes the wavefront to tilt as it enters the new medium, so the direction of the wave bends. That bending is refraction. For light, if the second medium slows the light down, the ray bends toward the normal to the boundary; if the second medium speeds it up, it bends away from the normal. The relationship between the incident and refracted angles is described by Snell's law, n1 sin(theta1) = n2 sin(theta2). This is what makes a straw look bent when you place it in water, for example. Other terms describe different effects: dispersion is the separation of colors due to wavelength-dependent speeds, reflection is the wave bouncing off the boundary, and absorption is the wave's energy being taken up by the medium.

9. What term describes the measure of extra positive or negative particles in an object?

A. Mass

B. Charge

C. Energy

D. Potential

Electric charge is the measure of the imbalance of positive and negative particles in an object. If there are more protons than electrons, the net charge is positive; if there are more electrons, it's negative; equal numbers mean the object is neutral. Charge underpins electric forces and is quantified in coulombs, with protons and electrons carrying fixed amounts of charge in opposite signs. This differs from mass (amount of matter), energy (ability to do work), and potential (electric potential energy per unit charge).

10. The bouncing back of a wave, such as light or sound, when it hits a surface it cannot pass through is called.

A. Absorption

B. Refraction

C. Reflection

D. Diffraction

Reflection is the bouncing back of a wave when it hits a boundary it cannot pass through. Here, since the surface prevents transmission, the wave is redirected back into the original medium, which is why light or sound appears to bounce off the surface. For a smooth surface, the angle of incidence equals the angle of reflection. If the wave could pass into the material, you'd see refraction; if the energy were absorbed, it would be absorption; and if the wave bent around an obstacle, that would be diffraction.

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://highschoolphysics.examzify.com

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