

GMAS PHYSICAL SCIENCE PRACTICE TEST (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. Which term describes how many times a wave repeats per second?
 - A. Amplitude
 - B. Frequency
 - C. Wavelength
 - D. Period
2. What is the equation for kinetic energy?
 - A. $KE = m v$
 - B. $KE = 1/2 m a^2$
 - C. $KE = m g h$
 - D. $KE = 1/2 m v^2$
3. According to Newton's Second Law, what happens to the force if mass doubles while acceleration stays the same?
 - A. It quadruples
 - B. It stays the same
 - C. It doubles
 - D. It halves
4. Which simple machine is described as an inclined plane with one or two sloping sides?
 - A. Inclined Plane
 - B. Screw
 - C. Wedge
 - D. Compound Machine
5. $t - t$ is the symbol for what?
 - A. Q
 - B. Δt
 - C. Cp
 - D. m

6. Which concept identifies the elements present in a compound and their respective quantities?
- A. Isotope
 - B. Chemical formula
 - C. Bond
 - D. Periodic table
7. A carbon atom with 6 protons and 7 neutrons has a mass number of
- A. 6
 - B. 1
 - C. 13
 - D. 3
8. If a force of 10 newtons moves an object 5 meters, how much work is done?
- A. 5 J
 - B. 100 J
 - C. 50 J
 - D. 0 J
9. Which term describes a material through which electrons move easily?
- A. Electrical conductor
 - B. Semiconductor
 - C. Electrical insulator
 - D. Resistor
10. What is energy in the form of motion called?
- A. Potential energy
 - B. Kinetic energy
 - C. Thermal energy
 - D. Chemical energy

Answers

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

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Explanations

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1. Which term describes how many times a wave repeats per second?

- A. Amplitude
- B. Frequency**
- C. Wavelength
- D. Period

Frequency is the rate at which a wave repeats its cycle each second, measured in hertz. It tells you how many cycles occur per second. Amplitude describes the height of the wave, wavelength describes the distance between repeats, and period is the time for one cycle (the inverse of frequency). Therefore, the term that describes how many times a wave repeats per second is frequency.

2. What is the equation for kinetic energy?

- A. $KE = m v$
- B. $KE = 1/2 m a^2$
- C. $KE = m g h$
- D. $KE = 1/2 m v^2$**

Kinetic energy is the energy an object has because it is moving, and it depends on both how heavy it is and how fast it travels. The formula shows that energy of motion equals one-half times the mass times the velocity squared. The one-half factor and the velocity squared aren't arbitrary: they come from how much work is required to accelerate an object from rest. Because velocity is squared, speed has a big effect on energy—doubling the speed makes the energy increase by a factor of four, while doubling the mass doubles the energy. Check the units to see it makes sense: kilograms times (meters per second) squared gives kilograms times square meters per second squared, which is joules, the standard unit of energy. The other expressions don't match kinetic energy: momentum is $m v$, not energy; potential energy from gravity is $m g h$; and combining mass with acceleration ($1/2 m a^2$) mixes variables that describe motion differently and doesn't represent the energy of motion.

3. According to Newton's Second Law, what happens to the force if mass doubles while acceleration stays the same?

- A. It quadruples
- B. It stays the same
- C. It doubles**
- D. It halves

When acceleration is kept constant, force is directly proportional to mass because $F = m a$. If mass doubles while a stays the same, the product $m a$ doubles, so the force must double. Think of pushing a cart: with the same speed of acceleration, a heavier cart requires a stronger push, exactly doubling the force if the mass doubles. A quadruple force would require something else to change (like acceleration or mass changing by more than a simple doubling); the force staying the same would mean mass or acceleration didn't change; halving the force would require mass to halve or acceleration to drop. So the force doubles.

4. Which simple machine is described as an inclined plane with one or two sloping sides?

- A. Inclined Plane
- B. Screw
- C. Wedge**
- D. Compound Machine

A wedge is formed by two inclined planes joined at a thin edge. That edge concentrates force along a sharp line, allowing the wedge to split, cut, or pry apart materials when you drive it in. So describing it as an inclined plane with one or two sloping sides fits a wedge perfectly—the two sloping surfaces meet at the edge to perform tasks like cutting or splitting. The other options don't fit this description: an inclined plane by itself is just a single ramp, a screw is a spiraled inclined plane around a cylinder, and a compound machine combines multiple simple machines.

5. $t - t$ is the symbol for what?

- A. Q
- B. Δt**
- C. Cp
- D. m

$t - t$ represents the amount of time that passes from time t to time t . In physics, this duration is called the time interval and is written with the Greek letter Δt . It tells you how long something lasts or how much time elapses between two moments, with units of seconds. If t comes after t , Δt is positive; if the moments were swapped, it would be negative, but we usually think of the magnitude as the elapsed time. The other quantities refer to different ideas: Q is heat energy transferred, Cp is the specific heat capacity at constant pressure, and m is mass.

6. Which concept identifies the elements present in a compound and their respective quantities?

- A. Isotope
- B. Chemical formula**
- C. Bond
- D. Periodic table

Understanding what a compound is made of and in what amounts is shown by a chemical formula. It lists each element present with its symbol and uses subscripts to indicate how many atoms of that element are in one molecule or formula unit. For example, CO₂ means one carbon atom and two oxygen atoms per molecule, while NaCl means one sodium and one chlorine per unit. This is different from an isotope, which is a variant of an element with a different number of neutrons, a bond, which describes how atoms are connected but not the exact counts of each element, and the periodic table, which catalogs elements rather than detailing a specific compound's composition.

7. A carbon atom with 6 protons and 7 neutrons has a mass number of

- A. 6
- B. 1
- C. 13**
- D. 3

Mass number is the total count of nucleons in the nucleus, i.e., protons plus neutrons. This carbon atom has 6 protons and 7 neutrons, so its mass number is $6 + 7 = 13$. The mass number reflects the total number of nucleons and is not the same as the number of protons alone (which is 6) or neutrons alone (which is 7). Hence 13 is the correct mass number.

8. If a force of 10 newtons moves an object 5 meters, how much work is done?

- A. 5 J
- B. 100 J
- C. 50 J**
- D. 0 J

Work is the transfer of energy that occurs when a force moves an object. When the force acts in the same direction as the object's motion, the amount of work is simply the product of the force and the distance: $W = F \times d$. With a 10-newton force moving the object 5 meters, the work done is $10 \times 5 = 50$ joules. The joule is the unit of work, equivalent to one newton-meter. If the force were not aligned with the motion, you'd multiply by the cosine of the angle between them, $W = F d \cos(\theta)$; for perpendicular force this would be zero. In this scenario, the force and displacement are in line, so the work is 50 joules.

9. Which term describes a material through which electrons move easily?

- A. Electrical conductor
- B. Semiconductor
- C. Electrical insulator**
- D. Resistor

A material through which electrons move easily is an electrical conductor. Conductors have many free electrons that can respond quickly to an electric field, so electrical current flows with relatively low resistance. Metals are classic examples because their atoms form a lattice with delocalized electrons that can drift when voltage is applied, like copper or aluminum in wires. In contrast, insulators hold onto their electrons tightly, so they resist current and require much higher energy to move electrons. Semiconductors have conductivities between conductors and insulators and can be tuned by temperature, impurities, or light. A resistor isn't a type of material but a device designed to add resistance to a circuit, whereas the term describing a material's ability to conduct is conductor.

10. What is energy in the form of motion called?

- A. Potential energy
- B. Kinetic energy**
- C. Thermal energy
- D. Chemical energy

Kinetic energy is energy in motion. It depends on how much matter is moving and how fast it's moving; more mass or greater speed means more kinetic energy, described by $KE = \frac{1}{2} m v^2$ in joules. When objects move, their energy is kinetic; as they slow, that energy can be converted into heat or other forms. The other energy types are potential energy, stored due to position (like a raised object or a stretched spring); thermal energy, related to temperature and the random motion of molecules; and chemical energy, stored in chemical bonds. This is why a rolling ball or a moving car has kinetic energy, while a raised object has potential energy.

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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://gmasphysicalscience.examzify.com>

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

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