

# GMAS Physical Science 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

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- 1. What is the distance between one point on a wave and the nearest point just like it?**
  - A. Wavelength**
  - B. Amplitude**
  - C. Frequency**
  - D. Period**
  
- 2. What type of force is directed toward the center of a circular path to keep an object moving in a circle?**
  - A. centrifugal force**
  - B. gravitational force**
  - C. normal force**
  - D. centripetal force**
  
- 3. 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**
  
- 4. What is the energy stored due to an object's position called?**
  - A. Kinetic energy**
  - B. Potential energy**
  - C. Elastic potential energy**
  - D. Thermal energy**
  
- 5. What is the smallest unit of an element that cannot be further simplified by chemical means?**
  - A. Molecule**
  - B. Quark**
  - C. Nucleus**
  - D. Atom**

6. Which term refers to the splitting of a nucleus into smaller parts, releasing energy?
- A. Fusion
  - B. Fission
  - C. Radioactive decay
  - D. Transmutation
7. If a 50 kg mass experiences an acceleration of  $2 \text{ m/s}^2$ , what is the force?
- A. 100 N
  - B. 50 N
  - C. 200 N
  - D. 25 N
8. Which simple machine uses a wheel with a rope around it to lift loads by changing the direction of the force?
- A. Pulley
  - B. Wheel and Axle
  - C. Wedge
  - D. Inclined Plane
9. Which form of energy is stored in chemical bonds?
- A. Chemical potential energy
  - B. Kinetic energy
  - C. Elastic potential energy
  - D. Thermal energy
10. What term describes the thermal energy that flows from a hotter object to a cooler object?
- A. Heat
  - B. Temperature
  - C. Work
  - D. Energy

## Answers

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

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## **Explanations**

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**1. What is the distance between one point on a wave and the nearest point just like it?**

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

The distance between one point on a wave and the nearest point just like it is called the wavelength. This is the spatial period of the wave—the length over which the wave pattern repeats. You can think of it as the distance from one crest to the next crest, or from one point of a certain displacement and motion to the next identical point. Amplitude is how far the medium moves from rest, not how far the pattern travels. Frequency is how many cycles occur per second, and period is the time for one complete cycle. Since the question asks for a spatial distance between identical points on the wave, wavelength is the correct term.

**2. What type of force is directed toward the center of a circular path to keep an object moving in a circle?**

- A. centrifugal force**
- B. gravitational force**
- C. normal force**
- D. centripetal force**

Circular motion requires an inward pull toward the center that provides the centripetal acceleration. The inward force responsible for keeping the object moving in a circle is centripetal force. It isn't a separate physical force by itself; it's the net force toward the center produced by real forces like gravity, tension, friction, or the normal force, depending on the situation. The term centrifugal force, by contrast, is a outward-acting idea that appears in rotating reference frames and does not cause the motion in an inertial frame.

**3. 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.

**4. What is the energy stored due to an object's position called?**

- A. Kinetic energy
- B. Potential energy**
- C. Elastic potential energy
- D. Thermal energy

Energy stored because of an object's position is called potential energy. This type of energy exists whenever an object is located in a place or configuration that could do work if it moves. For example, lifting a book gives it gravitational potential energy that depends on its height and mass, and it can convert to kinetic energy as it falls. Elastic potential energy is another form of potential energy that appears when a spring or elastic object is stretched or compressed. In contrast, kinetic energy is the energy of motion, and thermal energy relates to temperature and the random motion of particles.

**5. What is the smallest unit of an element that cannot be further simplified by chemical means?**

- A. Molecule
- B. Quark
- C. Nucleus
- D. Atom**

In chemistry, the smallest unit of an element that cannot be broken down into simpler substances by chemical methods is the atom. An atom preserves the chemical properties of the element and is made up of a nucleus (protons and neutrons) surrounded by electrons. Chemical changes involve rearranging electrons and forming or breaking bonds between atoms, so you can split compounds into smaller molecules and atoms, but you don't break the nucleus itself in ordinary chemical reactions. To actually split an atom into smaller parts, you'd need nuclear processes. A molecule is a group of two or more atoms bonded together, and those bonds can be broken by chemical means, so a molecule is not the smallest unit of an element. The nucleus is inside the atom and, while it can be altered, that requires nuclear processes beyond chemistry. A quark is a fundamental particle inside protons and neutrons and is far smaller than an atom, but chemical changes don't involve quarks. So the correct concept is that the atom is the smallest unit of an element that cannot be further simplified by chemical means.

6. Which term refers to the splitting of a nucleus into smaller parts, releasing energy?

A. Fusion

**B. Fission**

C. Radioactive decay

D. Transmutation

Splitting a nucleus into smaller parts with energy release is nuclear fission. In fission, a heavy nucleus becomes lighter nuclei and sometimes free neutrons, and the total mass of the products is less than the original mass. That missing mass is converted into energy, per  $E = mc^2$ . The reason energy comes out is that heavy nuclei have relatively low binding energy per nucleon; when they break into medium-mass nuclei, the products have a higher overall binding energy, so the system releases energy as the nuclei become more tightly bound. This process is different from fusion, which combines light nuclei to form heavier ones and releases energy in that context. Radioactive decay involves a nucleus spontaneously transforming and emitting radiation, not necessarily splitting into two large parts. Transmutation means one element changes into another via nuclear reactions, which can include fission but isn't defined by the splitting itself.

7. If a 50 kg mass experiences an acceleration of  $2 \text{ m/s}^2$ , what is the force?

**A. 100 N**

B. 50 N

C. 200 N

D. 25 N

Newton's second law tells us that force equals mass times acceleration. So with a 50 kg mass and an acceleration of  $2 \text{ m/s}^2$ , the force is  $50 \times 2 = 100$  newtons. The newton is the unit N, which comes from  $\text{kg}\cdot\text{m/s}^2$ , so the units line up. If you see other numbers, they come from different accelerations or masses. For example, a force of 50 N would correspond to  $1 \text{ m/s}^2$  with the same mass, 200 N would correspond to  $4 \text{ m/s}^2$ , and 25 N would correspond to  $0.5 \text{ m/s}^2$ .

8. Which simple machine uses a wheel with a rope around it to lift loads by changing the direction of the force?

**A. Pulley**

B. Wheel and Axle

C. Wedge

D. Inclined Plane

A pulley is the device that uses a wheel with a rope around it to lift loads by changing the direction of the force. When you pull on the rope, the rope travels over the wheel and redirects the direction of your effort, making it easier to lift the load because you can pull downward or to the side instead of lifting straight up. In simple fixed pulleys, the change in direction is the main effect; in setups with multiple rope segments, the effort needed can be reduced further by sharing the load across more supporting ropes. This directional change is what distinguishes a pulley from the other simple machines listed.

**9. Which form of energy is stored in chemical bonds?**

- A. Chemical potential energy**
- B. Kinetic energy**
- C. Elastic potential energy**
- D. Thermal energy**

Energy stored in chemical bonds is chemical potential energy. This is a type of potential energy that comes from the specific arrangement of atoms and the electrons in a molecule. It isn't about motion, so it's not kinetic energy, and it isn't the energy stored in a stretched spring (elastic potential) or the random motion of particles due to temperature (thermal energy). In chemical reactions, bonds are broken and new bonds form, releasing or absorbing energy, which is why fuels, foods, and batteries can provide usable energy when they react. So the energy held in the bonds of molecules is chemical potential energy.

**10. What term describes the thermal energy that flows from a hotter object to a cooler object?**

- A. Heat**
- B. Temperature**
- C. Work**
- D. Energy**

Heat is the energy that flows between objects because of a temperature difference. Temperature tells us how hot something is, not the energy moving. When a hotter object and a cooler object are connected so energy can move, heat transfers from the hotter to the cooler until their temperatures equalize. The amount of heat transferred depends on the temperature difference, the materials' ability to conduct heat, the contact area, and how long they're in contact. Energy is a broad term, and work is energy transfer by a force causing displacement, but heat specifically describes energy in transit due to a temperature difference.

## 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](mailto: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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