

# TExES Science 7-12 (236) 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. Which scientific process is responsible for the movement of tectonic plates?**
  - A. Evaporation**
  - B. Convection**
  - C. Condensation**
  - D. Subduction**
  
- 2. What best characterizes the climate of the neritic zone?**
  - A. Completely dark and cold**
  - B. Warm, with varying salinity**
  - C. Consistently high pressure**
  - D. High levels of light due to shallowness**
  
- 3. Which of the following is the most valuable object to recycle?**
  - A. Glass**
  - B. Newspaper**
  - C. Aluminum**
  - D. Plastic**
  
- 4. What is described as shaking and vibration at the surface of the earth?**
  - A. Seismic waves**
  - B. Earthquake**
  - C. Volcanic eruption**
  - D. Fault movement**
  
- 5. What is the consequence of homozygous deletions in chromosomes?**
  - A. Can lead to an enhanced trait in organisms**
  - B. Results in an absence of genes, usually lethal**
  - C. Increases the number of chromosomes present**
  - D. Promotes genetic variation**

**6. Why is distillation an effective method for separating a mixture of methanol and water?**

- A. The normal boiling point of methanol is significantly less than that of water**
- B. Alcohol evaporates at room temperature**
- C. Water has a lower density than methanol**
- D. Methanol is less soluble in water**

**7. What natural process creates dripstones in caves?**

- A. Glacial erosion**
- B. Water dripping inside of caves**
- C. Wind erosion**
- D. Lava cooling**

**8. What is the main role of proprioceptors in the nervous system?**

- A. To process visual signals**
- B. To balance motor control**
- C. To detect body position and movement**
- D. To regulate internal organs**

**9. How is molality defined in a solution?**

- A. As grams of solute per liter of solution**
- B. As moles of solute per kilogram of solvent**
- C. As the total volume of the solution in liters**
- D. As the concentration of the solution in grams per liter**

**10. Which of the following would most likely occur at a convergent boundary?**

- A. Formation of new oceanic crust**
- B. Earthquakes and volcanic activity**
- C. Seafloor spreading**
- D. Formation of sedimentary rocks**

## **Answers**

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

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## **Explanations**

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**1. Which scientific process is responsible for the movement of tectonic plates?**

- A. Evaporation**
- B. Convection**
- C. Condensation**
- D. Subduction**

The movement of tectonic plates is primarily driven by convection, which occurs in the Earth's mantle. This process involves the transfer of heat from the Earth's core to the mantle, leading to the movement of semi-fluid rock. As the mantle material heats up, it becomes less dense and rises towards the Earth's crust. Upon cooling, it becomes denser and sinks back down. This continuous cycle creates a flow that exerts force on the tectonic plates, causing them to shift, collide, or slide past one another at their boundaries. Subduction, while related to tectonic activity, specifically refers to the process where one plate moves under another and into the mantle, but it is a consequence of the broader convection currents that drive the plate movements. In contrast, evaporation and condensation are processes related to the water cycle and atmospheric phenomena and do not directly contribute to tectonic plate movement.

**2. What best characterizes the climate of the neritic zone?**

- A. Completely dark and cold**
- B. Warm, with varying salinity**
- C. Consistently high pressure**
- D. High levels of light due to shallowness**

The neritic zone, which extends from the low tide mark to the edge of the continental shelf, is characterized by its shallow waters. This reduced depth allows for higher levels of light penetration compared to deeper oceanic zones. Because light is essential for photosynthesis, this area supports a rich diversity of marine life, including various species of phytoplankton, seaweeds, and larger marine organisms that rely on these primary producers. The presence of abundant sunlight in the neritic zone contributes to heightened biological productivity, making it a critical habitat for many marine species. As a result, the combination of warm temperatures, light availability, and nutrient-rich waters makes the neritic zone one of the most biologically active and diverse regions in the ocean.

**3. Which of the following is the most valuable object to recycle?**

- A. Glass**
- B. Newspaper**
- C. Aluminum**
- D. Plastic**

Recycling aluminum is often considered the most valuable due to several key factors. Firstly, the energy savings associated with recycling aluminum are significant. It takes about 95% less energy to recycle aluminum compared to producing it from raw materials. This substantial reduction in energy usage contributes to lower greenhouse gas emissions, making aluminum recycling an environmentally friendly option. Additionally, aluminum is highly recyclable and can be reused indefinitely without losing its quality. This means that recycled aluminum can be transformed back into aluminum products repeatedly, creating a closed-loop system that is both efficient and sustainable. In terms of economic value, recycled aluminum is also highly sought after in the market. The demand for aluminum products is strong, and companies often find recycled aluminum to be a cost-effective alternative to new aluminum, driving up its value in recycling programs. While glass, newspaper, and plastic are also valuable materials to recycle, they do not typically offer the same level of energy savings and market demand that aluminum does, making aluminum the most valuable in terms of recycling efforts.

**4. What is described as shaking and vibration at the surface of the earth?**

- A. Seismic waves**
- B. Earthquake**
- C. Volcanic eruption**
- D. Fault movement**

The shaking and vibration at the surface of the Earth is best described as an earthquake. An earthquake occurs when there is a sudden release of energy in the Earth's lithosphere that creates seismic waves. These seismic waves propagate through the Earth and result in shaking that is felt at the surface. While seismic waves are indeed responsible for the shaking that occurs during an earthquake, they are not the same as the event itself. Seismic waves are the energy transmitted through the Earth, and they can be recorded by instruments during and after an earthquake. Fault movement is the process that may lead to an earthquake but does not encapsulate the entire phenomenon of surface shaking. A volcanic eruption may also cause ground shaking, but this shaking is specifically related to the volcanic activity and is not an earthquake in itself. In summary, an earthquake encompasses both the shaking and the associated seismic waves, making it the appropriate description for the shaking and vibration occurring at the Earth's surface.

## 5. What is the consequence of homozygous deletions in chromosomes?

- A. Can lead to an enhanced trait in organisms
- B. Results in an absence of genes, usually lethal**
- C. Increases the number of chromosomes present
- D. Promotes genetic variation

Homozygous deletions occur when both copies of a gene or a segment of the chromosome are missing. This results in a significant consequence for the organism because the absence of genes can disrupt important biological functions and developmental processes. In many cases, the loss of these genes can lead to lethality, particularly if the deleted genes are essential for survival, such as those involved in critical metabolic pathways or cell cycle regulation. This deletion can affect gene dosage, protein production, and overall cellular function, leading to severe phenotypic consequences. In organisms, the removal of essential genes through homozygous deletions typically results in either non-viable offspring or severe developmental issues if the organism survives. Therefore, in the context of genetics and chromosomal studies, the presence of homozygous deletions is often associated with critical health impacts or lethal outcomes in the organism.

## 6. Why is distillation an effective method for separating a mixture of methanol and water?

- A. The normal boiling point of methanol is significantly less than that of water**
- B. Alcohol evaporates at room temperature
- C. Water has a lower density than methanol
- D. Methanol is less soluble in water

Distillation is an effective method for separating a mixture of methanol and water primarily because of the difference in their boiling points. Methanol has a normal boiling point of approximately 64.7°C, while water has a much higher boiling point of 100°C. This difference allows methanol to vaporize at a lower temperature compared to water during the distillation process. As the mixture is heated, methanol will evaporate first, allowing it to be collected as vapor and then condensed back into liquid form, effectively separating it from the water. This principle of utilizing boiling point differences is the fundamental technique behind distillation, making it particularly suitable for separating substances that have significantly different boiling points. In the case of methanol and water, this method is not only effective but also widely used in laboratories and industrial processes to achieve purification of chemicals.

## 7. What natural process creates dripstones in caves?

- A. Glacial erosion
- B. Water dripping inside of caves**
- C. Wind erosion
- D. Lava cooling

Dripstones, also known as stalactites and stalagmites, are formed through a natural process involving water dripping inside of caves. When rainwater seeps into the ground, it can dissolve carbon dioxide, turning into a weak carbonic acid. As this acidic water enters the cave and drips from the ceiling, it deposits minerals such as calcite as it evaporates. Over time, these mineral deposits build up in the shape of icicle-like formations hanging from the ceiling (stalactites) and growing upwards from the cave floor (stalagmites). This process is primarily driven by the ongoing interaction between water, carbon dioxide, and limestone, which is abundant in many cave systems. The other options—glacial erosion, wind erosion, and lava cooling—are not related to the formation of dripstones. Glacial erosion involves the shaping of landscapes by glaciers, wind erosion refers to the wearing down of surfaces by wind, and lava cooling leads to formations associated with volcanic activity rather than mineral deposition in cave environments.

## 8. What is the main role of proprioceptors in the nervous system?

- A. To process visual signals
- B. To balance motor control
- C. To detect body position and movement**
- D. To regulate internal organs

Proprioceptors play a critical role in the nervous system by providing the brain with information about the position of different parts of the body and their movement. These specialized sensory receptors are located in muscles, tendons, and joints, enabling them to detect changes in body position and motion. This feedback is essential for maintaining posture and coordinating movement, allowing individuals to perform complex physical activities without needing to consciously think about the position of their limbs. The role of proprioceptors is fundamental to motor control as they help to refine the body's movements and maintain balance. The information they provide allows for adjustments based on the body's current position relative to the environment or other parts of the body. This is why the correct answer focuses on their function in detecting body position and movement.

## 9. How is molality defined in a solution?

- A. As grams of solute per liter of solution
- B. As moles of solute per kilogram of solvent**
- C. As the total volume of the solution in liters
- D. As the concentration of the solution in grams per liter

Molality is defined as the number of moles of solute present in one kilogram of solvent. This measurement is important in chemistry because it provides a way to express concentration that is independent of temperature and pressure, which can affect the volume of a solution. By focusing on the mass of the solvent rather than the total volume of the solution, molality is particularly useful in various calculations involving colligative properties, such as boiling point elevation and freezing point depression. Using moles of solute rather than grams avoids confusion that can arise from differences in molar mass and allows for direct comparisons between different solutes. Additionally, since molality considers the mass of the solvent, it remains constant regardless of temperature, unlike molarity, which relies on volume and can change with temperature fluctuations. Thus, defining molality in terms of moles of solute per kilogram of solvent provides a consistent and practical measure for laboratory and real-world applications.

## 10. Which of the following would most likely occur at a convergent boundary?

- A. Formation of new oceanic crust
- B. Earthquakes and volcanic activity**
- C. Seafloor spreading
- D. Formation of sedimentary rocks

At a convergent boundary, two tectonic plates move towards each other, which can lead to significant geological activity. One of the primary outcomes of this interaction is the occurrence of earthquakes and volcanic activity. When an oceanic plate collides with a continental plate, the denser oceanic plate is usually subducted beneath the lighter continental plate. This subduction process generates intense pressure and friction, leading to the release of energy in the form of earthquakes. Additionally, as the oceanic plate descends into the mantle, it melts and can lead to the formation of magma. This magma can rise to the surface, resulting in volcanic eruptions. Such geological processes are commonly observed along the Pacific Ring of Fire, a region with many convergent boundaries characterized by frequent earthquakes and active volcanoes. This makes it clear that convergent boundaries are primarily associated with seismic and volcanic activity, validating the selection of this answer. Other processes, like the formation of new crust or sedimentary rocks, occur at different types of boundaries and geological conditions.

# 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://texesscience7to12.examzify.com>**

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

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