

HISSET 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 of the following is NOT a component of the theory of evolution?**
 - A. Common Descent
 - B. Artificial Selection
 - C. Competition
 - D. Overpopulation
- 2. What system provides structure and protects major organs like the heart and lungs?**
 - A. Muscular System
 - B. Skeletal System
 - C. Nervous System
 - D. Endocrine System
- 3. Which of the following refers to twins that develop from a single fertilized egg?**
 - A. Fraternal Twins
 - B. Identical Twins
 - C. Half-Siblings
 - D. Sibling Pairs
- 4. Which term refers to a genetic condition that can be passed from parents to offspring?**
 - A. Hereditary Condition
 - B. Acquired Condition
 - C. Genetic Disorder
 - D. Environmental Disorder
- 5. Which type of joint allows for movement in a single plane only?**
 - A. Ball-and-Socket Joint
 - B. Hinge Joint
 - C. Pivot Joint
 - D. Gliding Joint

- 6. Which lobe of the cortex is responsible for processing visual information?**
- A. Frontal Lobe
 - B. Parietal Lobe
 - C. Occipital Lobe
 - D. Temporal Lobe
- 7. What term refers to a rare change in the DNA of a gene that creates genetic diversity?**
- A. Variation
 - B. Expression
 - C. Mutation
 - D. Replication
- 8. Which blood vessels are responsible for carrying blood back to the heart?**
- A. Capillaries
 - B. Arteries
 - C. Veins
 - D. Aorta
- 9. What is the primary role of chromosomes in a cell?**
- A. Energy transfer
 - B. Storage of nutrients
 - C. Carrying genetic information
 - D. Photosynthesis
- 10. What is the process called when a seed begins to sprout and grow into a young plant?**
- A. Fertilization
 - B. Germination
 - C. Pollination
 - D. Photosynthesis

Answers

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

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Explanations

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1. Which of the following is NOT a component of the theory of evolution?

- A. Common Descent
- B. Artificial Selection**
- C. Competition
- D. Overpopulation

The theory of evolution is built upon several foundational concepts that explain how species change over time. One key aspect is common descent, which suggests that all living organisms share a common ancestor from which they have evolved. This concept helps to understand the relationships between different species and their evolutionary history. Another important component is competition, which is a natural survival mechanism leading to the 'struggle for existence.' Organisms compete for limited resources, and this competition plays a critical role in natural selection, helping to shape the traits of species over time based on their adaptive advantages. Overpopulation is also a significant element of the theory, as it addresses the tendency of species to produce more offspring than can survive due to resource limitations. This leads to a struggle for survival and contributes to natural selection. Artificial selection, however, refers to the human-driven process of breeding organisms for desired traits, rather than a naturally occurring evolutionary mechanism. While it demonstrates how organisms can be changed over time, it does not underpin the core principles of natural evolution as described in the theory. Hence, it is viewed as distinct from the fundamental concepts that establish the biological theory of evolution.

2. What system provides structure and protects major organs like the heart and lungs?

- A. Muscular System
- B. Skeletal System**
- C. Nervous System
- D. Endocrine System

The skeletal system is responsible for providing structure to the body and serves a critical protective function for major organs, including the heart and lungs. It consists of bones, cartilage, and joints that create a framework, allowing the body to maintain its shape and support weight. Moreover, the rib cage, which is part of the skeletal system, specifically encases and safeguards the heart and lungs from physical damage. This protective barrier is essential, as these organs are vital for circulation and respiration, respectively. The skeletal system also plays a role in producing blood cells and storing minerals, further emphasizing its importance in overall bodily function and health.

3. Which of the following refers to twins that develop from a single fertilized egg?

- A. Fraternal Twins
- B. Identical Twins**
- C. Half-Siblings
- D. Sibling Pairs

Identical twins are formed when a single fertilized egg, known as a zygote, undergoes division and develops into two embryos. This means that these twins share the same genetic material, as they come from the same egg and sperm. Because of their origin from one single zygote, identical twins typically have the same sex and look remarkably alike, sharing the same DNA. In contrast, fraternal twins arise from two separate eggs being fertilized by two different sperm cells. Therefore, they are genetically distinct from each other, just like typical siblings. Other terms such as half-siblings and sibling pairs do not specifically relate to the development of twins from a single fertilized egg. Half-siblings share only one parent, while sibling pairs can refer to any set of brothers and/or sisters, without the specific context of their origin from a fertilized egg.

4. Which term refers to a genetic condition that can be passed from parents to offspring?

- A. Hereditary Condition
- B. Acquired Condition
- C. Genetic Disorder**
- D. Environmental Disorder

Genetic disorder is the best fit because it names a health issue caused by a change in genes, and such gene-based conditions can be passed from parents to children. Genes carry the instructions for making our bodies, and when those instructions are altered, it can lead to a disorder that may be inherited in families. This distinguishes it from acquired conditions (which come from events after birth, like injuries or infections) or environmental disorders (caused by external factors like toxins). A hereditary condition is related to inheritance too, but the label genetic disorder specifically points to a gene-level cause that can be transmitted to offspring.

5. Which type of joint allows for movement in a single plane only?

- A. Ball-and-Socket Joint
- B. Hinge Joint**
- C. Pivot Joint
- D. Gliding Joint

A hinge joint is specifically designed to allow movement primarily in one direction, similar to the way a door opens and closes. This type of joint permits flexion and extension, providing a simple back-and-forth motion. Examples of hinge joints in the human body include the elbows and knees. These joints are structured in such a way that they restrict movement to a single plane, enhancing their efficiency for the specific types of motions needed for everyday activities. In contrast, a ball-and-socket joint allows for multidirectional movement, enabling rotation as well as the ability to move in multiple planes. A pivot joint facilitates rotation around a single axis, allowing for movements like turning the head side to side. Gliding joints, on the other hand, allow for sliding movements between flat surfaces. Each of these types provides different ranges of motion, whereas the hinge joint is uniquely suited for unidirectional movement.

6. Which lobe of the cortex is responsible for processing visual information?

- A. Frontal Lobe
- B. Parietal Lobe
- C. Occipital Lobe**
- D. Temporal Lobe

The occipital lobe is the part of the brain that is primarily responsible for processing visual information. Located at the back of the brain, it contains the primary visual cortex, where visual data received from the eyes is interpreted. This includes processing aspects such as color, light, movement, and shape, enabling individuals to understand and react to visual stimuli in their environment. The occipital lobe plays a critical role in forming our visual perceptions and is essential for activities that rely on sight. In contrast, the frontal lobe is associated with higher cognitive functions such as decision-making and problem-solving, the parietal lobe manages sensory information from the body and spatial orientation, and the temporal lobe is involved in processing auditory information and aspects of memory. Each of these lobes has distinct functions, but none is primarily dedicated to visual processing like the occipital lobe.

7. What term refers to a rare change in the DNA of a gene that creates genetic diversity?

- A. Variation
- B. Expression
- C. Mutation**
- D. Replication

Mutation refers to a rare change in the DNA of a gene that can lead to genetic diversity. Mutations can occur naturally through various processes, such as errors during DNA replication or due to environmental factors. When mutations happen in the DNA sequence of a gene, they can result in new traits or characteristics that can be passed on to future generations if they occur in reproductive cells. This genetic variability is crucial for the process of evolution, as it provides a substrate upon which natural selection can act, enabling populations to adapt over time. The other terms relate to DNA and genetics but do not specifically refer to the creation of genetic diversity through changes in the DNA sequence. Variation generally describes the differences among individuals in a population, expression refers to the process by which information from a gene is used to synthesize a functional gene product (like proteins), and replication is the process by which DNA makes a copy of itself. Hence, mutation is the most accurate term that directly addresses the concept of changes in DNA contributing to genetic diversity.

8. Which blood vessels are responsible for carrying blood back to the heart?

- A. Capillaries
- B. Arteries
- C. Veins**
- D. Aorta

The correct answer is that veins are responsible for carrying blood back to the heart. Veins are specialized blood vessels that have thinner walls than arteries and contain valves that prevent the backflow of blood, ensuring that it continues to move toward the heart. The structure of veins, along with various mechanisms such as muscle contractions and pressure changes within the cardiovascular system, aids in the effective transport of deoxygenated blood from the body back to the heart. Capillaries, while essential in the circulatory system, function differently; they are the sites of exchange between blood and tissues, allowing for the transfer of oxygen, nutrients, and waste products, rather than transporting blood back to the heart. Arteries carry oxygenated blood away from the heart to distribute it throughout the body, which is a critical aspect of the circulatory process. The aorta is the largest artery in the body and distributes oxygen-rich blood from the heart to various parts of the body, further distinguishing its role from that of veins. Thus, veins are the key vessels that ensure blood returns to the heart, completing the cycle of circulation.

9. What is the primary role of chromosomes in a cell?

- A. Energy transfer
- B. Storage of nutrients
- C. Carrying genetic information**
- D. Photosynthesis

The primary role of chromosomes in a cell is carrying genetic information. Chromosomes are structures found within cells that contain DNA, which holds the instructions for the development, functioning, growth, and reproduction of all living organisms. Each chromosome is composed of chromatin, which consists of DNA tightly coiled around proteins called histones. This organization allows for efficient packaging and management of the genetic material. The specific sequences of DNA bases within the chromosomes encode genes, which are the units of heredity. Those genes provide the necessary instructions for synthesizing proteins, which are vital for the various functions and structures within a cell. Therefore, chromosomes are essential for the transmission of genetic traits from one generation to the next and play a crucial role during cell division when they ensure that DNA is accurately copied and distributed to daughter cells. The other choices do not serve as primary roles of chromosomes. Energy transfer is typically associated with mitochondria and other cellular organelles. Storage of nutrients relates to vacuoles and the endoplasmic reticulum, while photosynthesis occurs in chloroplasts in plant cells and is not a function of chromosomes. Hence, the correct understanding of chromosomes revolves around their function in genetic information, which is foundational for biology and understanding heredity.

10. What is the process called when a seed begins to sprout and grow into a young plant?

A. Fertilization

B. Germination

C. Pollination

D. Photosynthesis

The process in which a seed begins to sprout and grow into a young plant is known as germination. This occurs when environmental conditions such as moisture, temperature, and sometimes light are favorable for the seed. During germination, the seed absorbs water and swells, which activates enzymes that trigger growth. The seed coat breaks open, and the embryo starts to develop root and shoot systems, ultimately leading to the establishment of a young plant. This is a crucial phase in the life cycle of plants, as it marks the transition from a dormant seed to an actively growing plant. Fertilization, on the other hand, refers to the process where pollen meets the ovule to form a zygote, which is a precursor to seed formation. Pollination involves the transfer of pollen from the male part of a flower to the female part, which is a step prior to fertilization. Photosynthesis is the process by which plants convert light energy into chemical energy, using water and carbon dioxide to produce glucose and oxygen, but this occurs after germination. Understanding these distinct processes is essential for grasping plant biology as a whole.

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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://hisetscience.examzify.com>

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

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