

HISET SCIENCE PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE**

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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 structure carries impulses away from the cell body?**
 - A. Dendrites
 - B. Axons
 - C. Soma
 - D. Synapse
- 2. What type of sugar is produced by photosynthesis and utilized by plants as a source of energy?**
 - A. Galactose
 - B. Fructose
 - C. Glucose
 - D. Maltose
- 3. Which hormone mobilizes glucose from body storage when needed?**
 - A. Insulin
 - B. Adrenaline
 - C. Glucagon
 - D. Cortisol
- 4. Groups of individuals that belong to the same species and live in the same area are known as what?**
 - A. Communities
 - B. Species
 - C. Populations
 - D. Flocks
- 5. What classification includes organisms like octopuses and squids?**
 - A. Mollusks
 - B. Crustaceans
 - C. Worms
 - D. Insects

- 6. What diagram illustrates the feeding relationships between organisms in an ecosystem?**
- A. Food Chain
 - B. Food Web
 - C. Energy Pyramid
 - D. Biogeochemical Cycle
- 7. What is produced when identical twins separate during early development?**
- A. Two fraternal twins
 - B. Two identical twins
 - C. One fraternal and one identical twin
 - D. Non-identical twins
- 8. Which parts of a neuron are specialized to receive information?**
- A. Dendrites
 - B. Axons
 - C. Myelin Sheath
 - D. Cell Body
- 9. Which type of organisms reproduces through the division of one cell to form the entire organism?**
- A. Multicellular Organisms
 - B. Unicellular Organisms
 - C. Colonial Organisms
 - D. Prokaryotic Organisms
- 10. What term describes a membrane-enclosed structure with a specialized function within a cell?**
- A. Organelles
 - B. Cells
 - C. Tissues
 - D. Organisms

Answers

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

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Explanations

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1. What structure carries impulses away from the cell body?

- A. Dendrites
- B. Axons**
- C. Soma
- D. Synapse

The structure that carries impulses away from the cell body is the axon. Axons are long, slender projections of a nerve cell that transmit electrical signals, known as action potentials, away from the soma (cell body) towards other neurons, muscles, or glands. The function of axons is crucial for the communication between different parts of the nervous system and the body. While dendrites carry impulses toward the cell body, and the soma is the main body of the neuron that processes information, the axon is specifically designed to convey information away from the soma to ensure that signals can be sent efficiently over distances. The synapse, on the other hand, is the junction between two neurons through which impulses are transmitted, but it does not carry impulses itself. Thus, axons play an essential role in the overall functioning of the nervous system by facilitating the flow of information away from the neuron's cell body.

2. What type of sugar is produced by photosynthesis and utilized by plants as a source of energy?

- A. Galactose
- B. Fructose
- C. Glucose**
- D. Maltose

During photosynthesis, plants convert carbon dioxide and water into glucose using sunlight as energy. Glucose is a simple sugar, classified as a monosaccharide, and serves as a primary energy source for plants. It is the main carbohydrate that plants synthesize and is crucial for their growth and metabolism. Once produced, glucose can be utilized immediately for energy or can be converted into other forms of carbohydrates, such as starch, for storage. Glucose plays a vital role in cellular respiration, where it is broken down to release energy needed for various biological processes. The other options, while they are types of sugars, do not serve the primary role that glucose does in plants' energy metabolism. Galactose and fructose are also monosaccharides but are not the main product of photosynthesis. Maltose is a disaccharide formed from two glucose units and is not directly produced during this process. Hence, glucose is correctly identified as the sugar produced by photosynthesis and used by plants as a source of energy.

3. Which hormone mobilizes glucose from body storage when needed?

- A. Insulin
- B. Adrenaline
- C. Glucagon**
- D. Cortisol

The hormone that mobilizes glucose from body storage when needed is glucagon. This hormone is produced by the pancreas and plays a crucial role in regulating blood sugar levels, particularly during periods of fasting or low carbohydrate intake. When blood glucose levels drop, glucagon is secreted into the bloodstream and signals the liver to break down glycogen, a stored form of glucose, into glucose. This process is known as glycogenolysis. The released glucose is then made available to the bloodstream, helping to maintain adequate blood sugar levels for the body's energy needs. In contrast, insulin is involved in lowering blood sugar levels by promoting the uptake of glucose into cells, adrenaline plays a role in the body's stress response and can increase energy availability, and cortisol helps regulate metabolism but is more associated with longer-term stress responses. Hence, glucagon is specifically responsible for stimulating the release of glucose in response to low blood sugar levels.

4. Groups of individuals that belong to the same species and live in the same area are known as what?

- A. Communities
- B. Species
- C. Populations**
- D. Flocks

The term used to describe groups of individuals that belong to the same species and live in the same area is "populations." A population is defined as a group of the same species that occupies a specific geographic area at the same time, allowing for interactions and potential breeding among individuals. This concept is fundamental in ecology as it helps in understanding species dynamics, birth and death rates, and the overall health of a species within its environment. In contrast, "communities" refer to multiple populations of different species that interact within a particular area. "Species" refers to a group of organisms that can interbreed and produce fertile offspring, but it does not imply a geographic component. "Flocks" is a term often used to describe specific groups of birds, and it is not a general term applicable to all species. Understanding populations is crucial for studying ecology and environmental science, as it allows researchers to assess biodiversity and conservation needs.

5. What classification includes organisms like octopuses and squids?

- A. Mollusks**
- B. Crustaceans
- C. Worms
- D. Insects

The classification that includes organisms like octopuses and squids is Mollusks. This group is characterized by their soft bodies, which are often protected by a hard shell. Mollusks encompass a wide variety of organisms, including not just cephalopods like octopuses and squids, but also gastropods (like snails and slugs) and bivalves (like clams and oysters). Cephalopods, which include octopuses and squids, are particularly notable for their advanced nervous systems, complex behaviors, and the ability to change color and texture, which helps them in communication and camouflage. This unique group is distinguished within the larger mollusk category due to their body structure, which typically includes a head with a set of arms or tentacles, a mantle covering their body, and a foot that is modified into siphons for locomotion. The other classifications listed do not include octopuses and squids. Crustaceans are a separate group that primarily comprises animals like crabs and shrimp, worms are part of a completely different phylum, and insects represent a vast group of arthropods that do not fall under the mollusk classification. Thus, Mollusks is the accurate classification for oct

6. What diagram illustrates the feeding relationships between organisms in an ecosystem?

- A. Food Chain
- B. Food Web**
- C. Energy Pyramid
- D. Biogeochemical Cycle

A food web is the diagram that illustrates the feeding relationships between organisms in an ecosystem. It comprises many interconnected food chains, showing how different species are linked through their dietary habits. This complexity reflects the reality of ecosystems, where organisms often have multiple food sources and predators, creating a network of interactions. On the other hand, a food chain represents a linear sequence of who eats whom, simplifying the relationships to a single pathway. An energy pyramid depicts the energy distribution among trophic levels in an ecosystem, while a biogeochemical cycle involves the movement of elements through biological and geological processes. Therefore, a food web is the most comprehensive representation of feeding interactions among various organisms, highlighting the intricate connections that sustain an ecosystem.

7. What is produced when identical twins separate during early development?

- A. Two fraternal twins
- B. Two identical twins**
- C. One fraternal and one identical twin
- D. Non-identical twins

When identical twins separate during early development, the result is two identical twins. This occurs during the process of cleavage in the early stages of embryonic development. Identical twins, also known as monozygotic twins, originate from a single fertilized egg that splits into two separate embryos. Since both embryos come from the same genetic material, they share the same DNA, making them genetically identical. This is distinct from fraternal twins, which arise from the fertilization of two different eggs with two different sperm, leading to genetically unique siblings. Thus, the correct answer accurately reflects the biological process involved in the formation of identical twins.

8. Which parts of a neuron are specialized to receive information?

- A. Dendrites**
- B. Axons
- C. Myelin Sheath
- D. Cell Body

Dendrites are specialized structures on a neuron that play a crucial role in receiving information from other neurons or sensory receptors. They are branch-like extensions that increase the neuron's surface area, allowing it to form connections with a larger number of other neurons. When neurotransmitters, which are chemical signals, are released from the axons of neighboring neurons, they bind to receptors on the dendrites, facilitating the transmission of signals. This attribute makes dendrites vital for processing incoming signals and integrating information prior to it being transmitted down the neuron. This is essential for the proper functioning of the nervous system, as it allows for the communication necessary for reflexes, sensory perception, and higher cognitive functions. While the axon is responsible for transmitting impulses away from the neuron, and the myelin sheath acts as insulation to speed up signal transmission, the cell body is primarily responsible for maintaining the neuron's health and processing incoming signals rather than directly receiving them. Thus, dendrites are unequivocally the components of a neuron specifically designed for receiving information.

9. Which type of organisms reproduces through the division of one cell to form the entire organism?

- A. Multicellular Organisms
- B. Unicellular Organisms**
- C. Colonial Organisms
- D. Prokaryotic Organisms

Unicellular organisms reproduce by a process called binary fission, wherein a single cell divides into two identical daughter cells. This method of reproduction allows the entire organism to be formed from just one cell, effectively creating a new and independent organism. Unicellular organisms include bacteria, protozoa, and some algae, which carry out all necessary functions for survival and reproduction within that single cell. The question pertains specifically to organisms that can generate a whole new individual merely from the division of one existing cell, which is characteristic of unicellular life forms. Such reproduction is efficient for their survival in various environments, allowing for rapid population growth under favorable conditions. The other organism types—multicellular, colonial, and prokaryotic—do not reproduce in the same straightforward manner of a single cell giving rise to a complete organism. Multicellular organisms consist of many cells that work together, colonial organisms involve groups of cells that may be interconnected but do not function as a single cell, and while prokaryotic organisms include unicellular entities, the specific context here emphasizes the act of a single cell forming a new organism.

10. What term describes a membrane-enclosed structure with a specialized function within a cell?

- A. Organelles**
- B. Cells
- C. Tissues
- D. Organisms

The term that describes a membrane-enclosed structure with a specialized function within a cell is organelles. Organelles are distinct components within a cell, each performing specific tasks crucial to the cell's overall function and health. For example, mitochondria are organelles responsible for energy production, while the endoplasmic reticulum plays a key role in protein and lipid synthesis. Cells, tissues, and organisms refer to larger biological structures. Cells are the basic units of life and contain organelles as part of their internal structure. Tissues are groups of similar cells that work together to perform a function, and organisms consist of multiple systems made up of different tissues and cells. Therefore, organelles specifically denote those specialized, membrane-bound structures within cells that enable diverse cellular functions.

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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