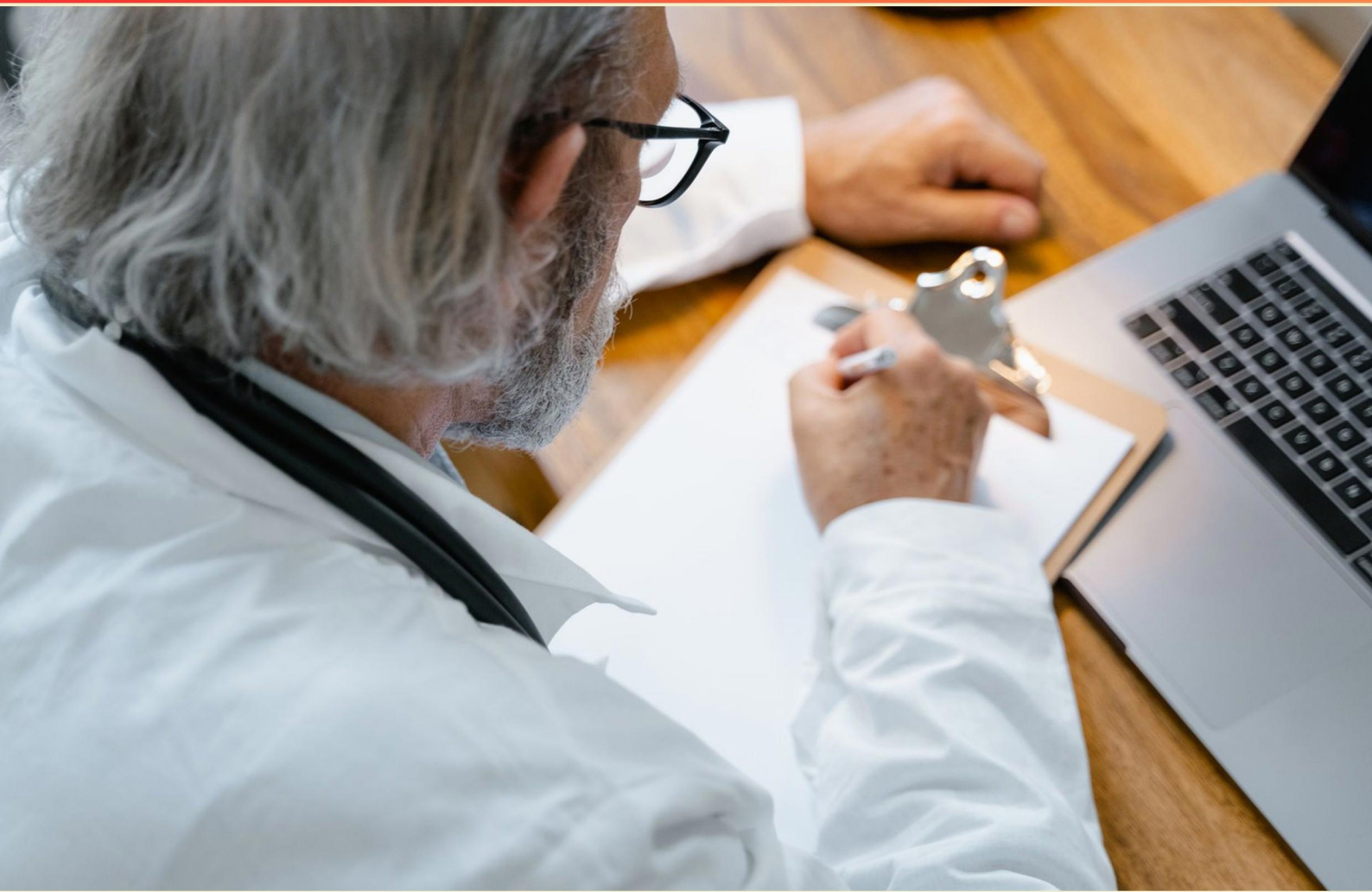


GALEN INTEGRATED HUMAN SCIENCE EXAM 1 PRACTICE (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
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 is the key difference between DNA and RNA?**
 - A. DNA is single-stranded, RNA is double-stranded
 - B. RNA contains thymine, DNA contains uracil
 - C. DNA contains deoxyribose, RNA contains ribose
 - D. RNA is found in the nucleus, DNA is found in the cytoplasm
- 2. What is the fate of substances moved via passive transport?**
 - A. They reach areas of low concentration
 - B. They are actively secreted from the cell
 - C. They are confined to the cytosol
 - D. They generate energy for the cell
- 3. What are the organelles known as the "garbage men" of the cell that remove damaged organelles?**
 - A. Lysosomes
 - B. Nucleus
 - C. Mitochondria
 - D. Golgi apparatus
- 4. What term describes a substance with a pH value of less than 7 and has more H^+ ions than OH^- ions?**
 - A. Neutrality
 - B. Alkalinity
 - C. Acidity
 - D. Basicity
- 5. What does metabolism refer to in biological processes?**
 - A. Only energy production
 - B. All chemical reactions in living organisms
 - C. Only catabolic reactions
 - D. Only anabolic reactions

- 6. What chromosome combination typically produces females?**
- A. XY chromosomes
 - B. XX chromosomes
 - C. X chromosome only
 - D. YY chromosomes
- 7. Which concept describes a solution with a lower concentration of solute compared to another solution?**
- A. Hypotonic
 - B. Isotonic
 - C. Hypertonic
 - D. Isosmotic
- 8. Which statement best describes glucose usage?**
- A. It can only be stored as fat.
 - B. It is only used immediately as fuel.
 - C. It can be burned as fuel or stored for later use.
 - D. It is used only for structural purposes in cells.
- 9. What type of bond joins amino acids together in proteins?**
- A. Hydrogen bonds
 - B. Covalent bonds
 - C. Peptide bonds
 - D. Ionic bonds
- 10. What type of bond is formed when one or more electrons are transferred from one atom to another?**
- A. Covalent bond
 - B. Ionic bond
 - C. Hydrogen bond
 - D. Polar bond

Answers

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

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Explanations

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1. What is the key difference between DNA and RNA?

- A. DNA is single-stranded, RNA is double-stranded
- B. RNA contains thymine, DNA contains uracil
- C. DNA contains deoxyribose, RNA contains ribose**
- D. RNA is found in the nucleus, DNA is found in the cytoplasm

The key difference between DNA and RNA lies in their sugar components. DNA contains deoxyribose, which is a five-carbon sugar that lacks an oxygen atom at the 2' position compared to ribose. This structural difference contributes to the stability of DNA, making it a more suitable molecule for long-term storage of genetic information. In contrast, RNA contains ribose, which has a hydroxyl (-OH) group at the 2' position, making it more reactive and less stable than DNA. This instability is advantageous for RNA during processes like transcription and translation, where short-lived molecules are needed to synthesize proteins based on the DNA template. The other choices highlight common misconceptions or incorrect facts related to the structure of DNA and RNA. RNA is typically single-stranded, and while thymine is indeed absent in RNA, it is actually uracil that replaces thymine. Additionally, DNA is predominantly found in the nucleus, while RNA can be found both in the nucleus and in the cytoplasm, which would also be incorrect. Understanding the distinct sugar components in DNA and RNA is fundamental to grasping their respective roles in genetics and cellular functions.

2. What is the fate of substances moved via passive transport?

- A. They reach areas of low concentration**
- B. They are actively secreted from the cell
- C. They are confined to the cytosol
- D. They generate energy for the cell

The correct choice highlights the essence of passive transport, which is a fundamental concept in cellular physiology. Passive transport involves the movement of substances across cell membranes without the expenditure of energy, primarily driven by concentration gradients. Substances tend to move from areas of higher concentration to areas of lower concentration until equilibrium is reached. This process is essential for maintaining cellular homeostasis, allowing nutrients to enter the cell and waste products to exit efficiently. The other options don't align with the principles of passive transport. Actively secreted substances imply active transport mechanisms that require energy, which contrasts with the nature of passive transport. The idea of substances being confined to the cytosol suggests a lack of movement, contradicting the very definition of passive transport where substances move across membranes. Lastly, while energy is crucial for many cellular processes, passive transport does not generate energy for the cell; rather, it utilizes the natural tendency of molecules to diffuse, thereby conserving energy.

3. What are the organelles known as the "garbage men" of the cell that remove damaged organelles?

A. Lysosomes

B. Nucleus

C. Mitochondria

D. Golgi apparatus

Lysosomes are often referred to as the "garbage men" of the cell due to their crucial role in digesting and breaking down waste materials, cellular debris, and damaged organelles. They contain enzymes that can degrade various biomolecules, including proteins, lipids, and carbohydrates, thereby facilitating the recycling of cellular components. This process is essential for maintaining cellular health and function, ensuring that damaged or non-functional organelles do not accumulate within the cell. The other options, although important cellular structures, do not perform this waste management function. The nucleus is primarily responsible for storing genetic material and regulating gene expression. Mitochondria are involved in energy production and metabolism, serving as the powerhouse of the cell. The Golgi apparatus plays a key role in modifying, sorting, and packaging proteins and lipids for secretion or delivery to other organelles but does not manage waste disposal. This distinction highlights the unique and critical function of lysosomes in cellular maintenance and cleanliness.

4. What term describes a substance with a pH value of less than 7 and has more H⁺ ions than OH⁻ ions?

A. Neutrality

B. Alkalinity

C. Acidity

D. Basicity

A substance with a pH value of less than 7 is classified as acidic. The key characteristic of acids is their tendency to have a higher concentration of hydrogen ions (H⁺) compared to hydroxide ions (OH⁻). This imbalance towards H⁺ ions gives the substance its acidic properties. In contrast, neutrality refers to a pH of exactly 7, indicating an equal concentration of H⁺ and OH⁻ ions. Alkalinity and basicity are terms used to describe substances with a pH greater than 7, where the concentration of OH⁻ ions exceeds that of H⁺ ions. Therefore, "acidity" is indeed the correct term in this context, as it directly relates to the condition where a solution is acidic by virtue of having a lower pH and a higher concentration of H⁺ ions.

5. What does metabolism refer to in biological processes?

A. Only energy production

B. All chemical reactions in living organisms

C. Only catabolic reactions

D. Only anabolic reactions

Metabolism encompasses all the biochemical processes that occur within living organisms, which includes both the breakdown of molecules to produce energy (catabolic reactions) and the synthesis of complex molecules from simpler ones (anabolic reactions). This comprehensive definition makes it clear that metabolism is not limited to just energy production, nor is it confined to only catabolic or anabolic pathways. Instead, it represents a complex network of chemical reactions critical for the maintenance of life, growth, and overall functioning of organisms. Therefore, understanding metabolism as the sum of all these reactions allows us to appreciate the dynamic processes that sustain life, making the answer identifying it as all chemical reactions in living organisms the most accurate.

6. What chromosome combination typically produces females?

- A. XY chromosomes
- B. XX chromosomes**
- C. X chromosome only
- D. YY chromosomes

The typical chromosome combination that produces females is the pairing of two X chromosomes, known as the XX combination. In humans, sex determination is primarily based on the presence of these sex chromosomes. Females typically inherit one X chromosome from each parent, which leads to the formation of a female phenotype. In contrast, the XY combination is typically associated with males, where the Y chromosome carries specific genes that influence male development. The presence of only one X chromosome does not provide the same genetic information necessary for female development. Similarly, the YY combination is not viable in humans, as it does not occur naturally and lacks the necessary genes for proper development. Understanding this genetic framework is crucial in grasping the biological basis of sex differentiation, illustrating how specific chromosomal combinations directly influence a person's sexual development and characteristics.

7. Which concept describes a solution with a lower concentration of solute compared to another solution?

- A. Hypotonic**
- B. Isotonic
- C. Hypertonic
- D. Isosmotic

The concept that describes a solution with a lower concentration of solute compared to another solution is referred to as hypotonic. In a hypotonic solution, the concentration of solutes outside a cell is lower than inside the cell, which can lead to water moving into the cell through osmosis. This movement of water can cause the cell to swell and possibly burst if the difference in concentration is significant. The term isotonic refers to solutions that have equal concentrations of solute, resulting in no net movement of water across a semi-permeable membrane. Hypertonic, on the other hand, describes a solution with a higher concentration of solute relative to another solution, which would lead to water moving out of a cell, causing it to shrink. Isosmotic refers to solutions that have the same osmotic pressure but does not necessarily account for the specific solute concentrations involved. Understanding these terms is crucial in the study of cellular behavior in different environments, particularly in physiology and biochemistry where the movement of water across membranes is fundamental to many biological processes.

8. Which statement best describes glucose usage?

- A. It can only be stored as fat.
- B. It is only used immediately as fuel.
- C. It can be burned as fuel or stored for later use.**
- D. It is used only for structural purposes in cells.

Glucose is a critical carbohydrate and serves as a primary energy source for the body. The statement that it can be burned as fuel or stored for later use accurately reflects its versatile role in metabolism. When glucose is available, it can be used immediately by cells through processes like glycolysis to produce energy (ATP). Additionally, when there is an excess of glucose, it does not just get wasted; instead, the body has mechanisms to store it for future energy needs. This is primarily done by converting glucose into glycogen through a process called glycogenesis, which takes place in the liver and muscle cells. When glycogen stores are full, additional glucose can be converted into fat through lipogenesis for long-term energy storage. Thus, the correct choice highlights both immediate energy production and the ability to maintain energy reserves, showcasing the dual functions of glucose in the body's metabolic processes. This adaptability is crucial for maintaining energy balance and ensuring that the body has fuel available when needed.

9. What type of bond joins amino acids together in proteins?

- A. Hydrogen bonds
- B. Covalent bonds
- C. Peptide bonds**
- D. Ionic bonds

Amino acids are the building blocks of proteins, and they are linked through a specific type of bond known as peptide bonds. When two amino acids undergo a condensation reaction, the carboxyl group of one amino acid reacts with the amino group of another, resulting in the release of water (H₂O) and the formation of a covalent bond known as a peptide bond. Peptide bonds are crucial in protein structure because they create a chain of amino acids, forming the primary structure of a protein. This linear sequence of amino acids ultimately folds into complex three-dimensional shapes necessary for the protein's function. While hydrogen bonds, covalent bonds, and ionic bonds play important roles in the overall structure and stability of proteins, particularly in maintaining secondary and tertiary structures, it's the peptide bonds that specifically link the amino acids together in the polypeptide chain. Recognizing this distinction is fundamental in understanding protein synthesis and structure.

10. What type of bond is formed when one or more electrons are transferred from one atom to another?

- A. Covalent bond
- B. Ionic bond**
- C. Hydrogen bond
- D. Polar bond

The bond formed when one or more electrons are transferred from one atom to another is known as an ionic bond. This type of bond typically occurs between metals and non-metals. In an ionic bond, an atom (usually a metal) loses one or more electrons, becoming a positively charged ion (cation), while another atom (typically a non-metal) gains those electrons, becoming a negatively charged ion (anion). The electrostatic attraction between these oppositely charged ions creates the ionic bond. Covalent bonds, on the other hand, involve the sharing of electrons between atoms rather than the transfer. Hydrogen bonds are a different type of interaction that occurs when hydrogen is covalently bonded to a highly electronegative atom, and they are relatively weaker than ionic and covalent bonds. Polar bonds refer to covalent bonds where electrons are shared unequally due to differences in electronegativity but do not involve complete transfer of electrons. Understanding the nature of ionic bonds is crucial, as they play a significant role in the properties of various compounds, especially in relation to their solubility in water and electrical conductivity when dissolved.

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:

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

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