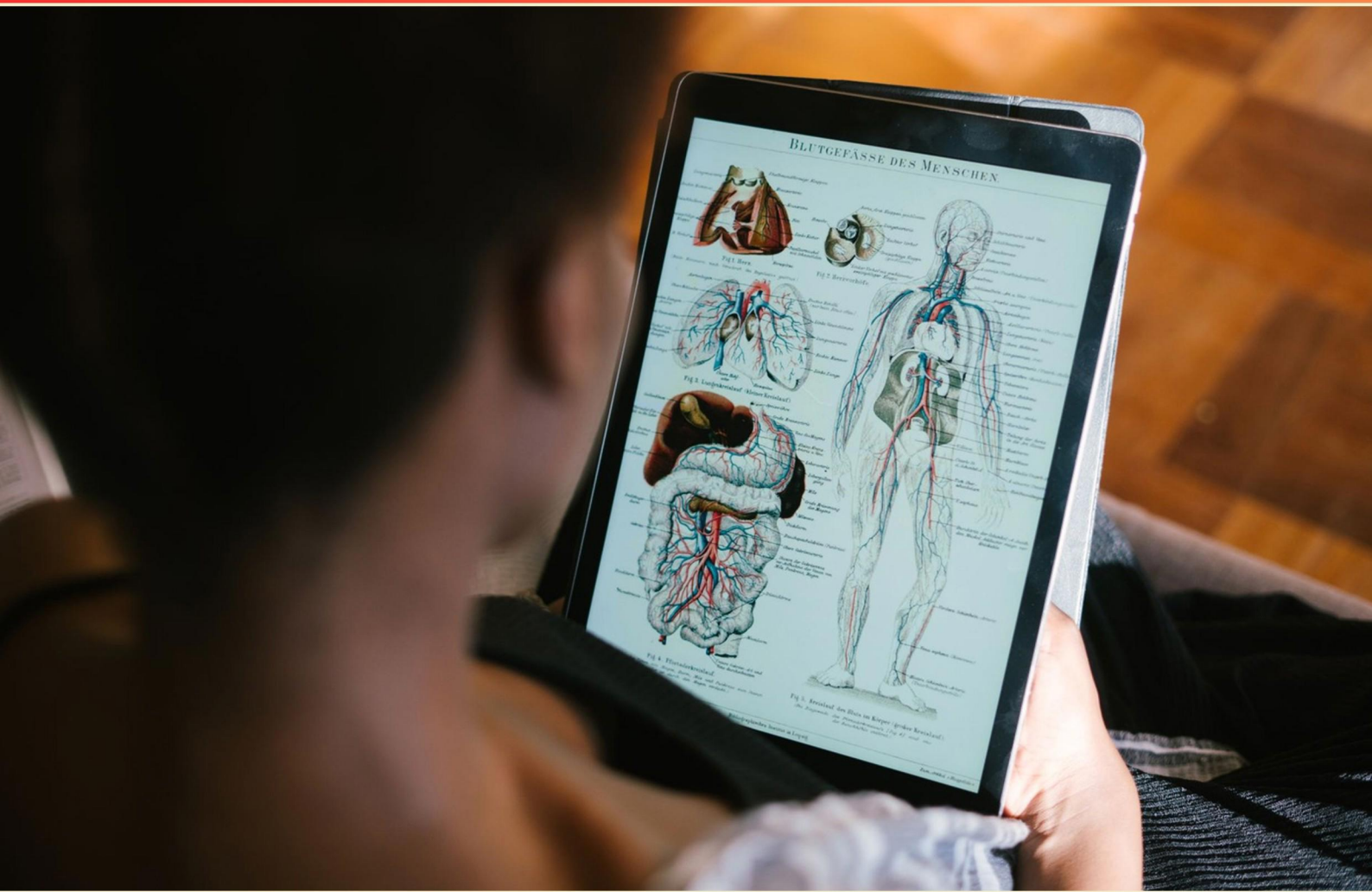


TEST OF ESSENTIAL ACADEMIC SKILLS (TEAS) SCIENCE PRACTICE TEST (SAMPLE) STUDY GUIDE



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. Nucleotides are to DNA as amino acids are to ____?**
 - A. Proteins
 - B. Ribosomes
 - C. RNA
 - D. Cells
- 2. What is the primary role of salivary amylase in digestion?**
 - A. Breaking down proteins
 - B. Emulsifying fats
 - C. Starting carbohydrate digestion
 - D. Killing bacteria
- 3. In a Punnett square, what is demonstrated by the alleles of the parents?**
 - A. Phenotype probability
 - B. Genotype possibility
 - C. Dominant trait presence
 - D. Gamete segregation
- 4. What performs extremely complex functions in the body?**
 - A. Cells
 - B. Tissues
 - C. Organs
 - D. Systems
- 5. Which of the following best describes the role of lysosomes?**
 - A. Energy production
 - B. Protein synthesis
 - C. Cellular waste recycling
 - D. Membrane transport
- 6. Mutations in which type of cells can be inherited by future generations?**
 - A. Brain cells
 - B. Germ cells
 - C. Skin cells
 - D. Nerve cells

7. If each parent has a parent with cystic fibrosis and neither are affected, what is the child's probability of being affected?
- A. 0%
 - B. 25%
 - C. 50%
 - D. 100%
8. True or False: Blood entering the pulmonary artery passes through the mitral valve.
- A. True
 - B. False
 - C. Only in certain conditions
 - D. This statement is incomplete
9. What organelle is responsible for energy production in cells?
- A. Chloroplast
 - B. Mitochondria
 - C. Lysosome
 - D. Ribosome
10. Which nervous system is responsible for the body's fight or flight response?
- A. Peripheral
 - B. Central
 - C. Parasympathetic
 - D. Sympathetic

Answers

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

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Explanations

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1. Nucleotides are to DNA as amino acids are to ____?

- A. Proteins**
- B. Ribosomes
- C. RNA
- D. Cells

Nucleotides serve as the building blocks of DNA, forming the essential sequences that encode genetic information. Similarly, amino acids are the fundamental components that link together to create proteins. In the process of protein synthesis, amino acids are assembled in specific sequences dictated by the genetic information carried by mRNA, ultimately folding into functional proteins. This relationship highlights how both nucleotides and amino acids are critical in the formation of larger biological structures—DNA for nucleotides and proteins for amino acids. The other options, such as ribosomes, RNA, and cells, do not represent the direct structural relationship that amino acids have with proteins.

2. What is the primary role of salivary amylase in digestion?

- A. Breaking down proteins
- B. Emulsifying fats
- C. Starting carbohydrate digestion**
- D. Killing bacteria

Salivary amylase plays a crucial role in the digestive process by initiating the breakdown of carbohydrates in the mouth. It is an enzyme secreted by the salivary glands that specifically targets starches, which are complex carbohydrates, and begins to convert them into simpler sugars like maltose. This action is significant because it starts the digestive process even before food reaches the stomach, allowing for more efficient digestion as food continues through the digestive tract. The other roles listed do not accurately represent the function of salivary amylase. While emulsifying fats is primarily the job of bile acids produced in the liver, enzymes that break down proteins are categorized as proteases, not amylases. Additionally, the function of killing bacteria is more associated with enzymes like lysozyme found in saliva rather than amylase. Thus, the primary role of salivary amylase is clearly centered on carbohydrate digestion.

3. In a Punnett square, what is demonstrated by the alleles of the parents?

- A. Phenotype probability
- B. Genotype possibility**
- C. Dominant trait presence
- D. Gamete segregation

In a Punnett square, the alleles of the parents are used to demonstrate the possible genotypes of their offspring. Each parent contributes one allele for a given trait, and the Punnett square visually represents all the possible combinations of these alleles. This allows for the prediction of genetic outcomes based on the specific alleles carried by each parent. The intersections in the grid show the potential genotype combinations that can occur when these alleles segregate during gamete formation and fertilization. While the other options might relate to aspects of heredity or patterns observed through Punnett squares, they do not accurately describe what is illustrated through the use of parent alleles in the square itself. The focus is on genotype possibilities, which includes all possible combinations that can arise given the parental genotypes.

4. What performs extremely complex functions in the body?

- A. Cells
- B. Tissues
- C. Organs**
- D. Systems

The correct choice highlights that organs perform extremely complex functions within the body. Each organ is specialized to carry out specific tasks that are essential for maintaining health and supporting life. For example, the heart pumps blood throughout the body, the lungs facilitate gas exchange, and the liver processes nutrients and detoxifies substances. These functions are intricate and involve numerous biochemical processes and interactions with other organs and systems. While cells and tissues are fundamental components of biological organization, they perform more localized and less complex functions compared to organs. Cells are the basic units of life, and while they carry out necessary functions like metabolism and energy production, they do not perform the high-level coordinated activities that organs do. Tissues, made up of groups of similar cells, serve supportive roles and can perform specific functions, but they too lack the complexity and coordination found at the organ level. Systems are made up of multiple organs that work together to perform broader functions, which adds another layer of complexity. However, when it comes to performing extremely complex functions, individual organs stand out as the primary units that achieve this through their specialized roles and interdependence within systems. Thus, organs are recognized for their intricate and essential functions in the human body.

5. Which of the following best describes the role of lysosomes?

- A. Energy production
- B. Protein synthesis
- C. Cellular waste recycling**
- D. Membrane transport

Lysosomes are often referred to as the cell's waste disposal system because they contain enzymes that break down waste materials and cellular debris. They can digest excess or worn-out organelles, food particles, and engulfed viruses or bacteria. When the cell needs to recycle components, lysosomes facilitate the breakdown of these materials into simpler compounds that can be reused for various cellular functions. The role of lysosomes in cellular waste recycling is crucial for maintaining cellular health and homeostasis, as they help in eliminating potentially harmful substances and recycling valuable molecules that the cell can use for energy or to build new cellular structures. This function is essential not only for individual cell health but also for overall tissue and organ health within an organism.

6. Mutations in which type of cells can be inherited by future generations?

- A. Brain cells
- B. Germ cells**
- C. Skin cells
- D. Nerve cells

Mutations that occur in germ cells, which include sperm and egg cells, can be passed on to offspring. This is because germ cells are involved in reproduction; when they combine during fertilization, any genetic changes present in these cells are transmitted to the next generation. This can lead to inherited traits or diseases, which may manifest in the offspring. In contrast, mutations in somatic cells—such as brain cells, skin cells, and nerve cells—do not have this capability. These mutations affect only the individual and are not passed down to future generations. Somatic cells are not involved in the reproductive process, so any changes within these cells will not impact genetic inheritance. This distinction is crucial for understanding how genetic information is transmitted and the implications of genetic mutations in both individuals and populations.

7. If each parent has a parent with cystic fibrosis and neither are affected, what is the child's probability of being affected?

- A. 0%
- B. 25%**
- C. 50%
- D. 100%

To understand the child's probability of being affected by cystic fibrosis, we need to consider the genetics involved with this recessive disorder. Cystic fibrosis is caused by mutations in the CFTR gene, and being affected by this condition requires an individual to inherit two copies of the mutated gene—one from each parent. In this scenario, each parent has a parent (the grandparent) who carries the cystic fibrosis allele; however, this does not mean that the parents are affected themselves. Affected individuals have two copies of the recessive allele (let's call the normal allele 'C' and the mutated allele 'c'), whereas unaffected individuals can either have two normal alleles (CC) or one normal and one mutated allele (Cc). We can deduce that if each parent has a parent with cystic fibrosis (cc), then both parents must be carriers of the cystic fibrosis allele, meaning they are both likely to be genotype Cc. The possible combinations for their children can be represented in a punnett square: - CC (normal) - Cc (carrier, normal) - Cc (carrier, normal) - cc (affected) From this cross, we see that there is a one in four chance (or

8. True or False: Blood entering the pulmonary artery passes through the mitral valve.

- A. True
- B. False**
- C. Only in certain conditions
- D. This statement is incomplete

Blood entering the pulmonary artery does not pass through the mitral valve; therefore, the statement is false. To understand this, it's important to know the pathway of blood circulation. Blood from the body returns to the right atrium of the heart via the superior and inferior vena cavae. From the right atrium, it passes through the tricuspid valve into the right ventricle. When the right ventricle contracts, it pumps the blood through the pulmonary valve into the pulmonary artery, which carries the blood to the lungs for oxygenation. The mitral valve, on the other hand, is located between the left atrium and the left ventricle and is involved in the pathway of oxygenated blood. Blood flows from the lungs into the left atrium, then passes through the mitral valve into the left ventricle before being distributed throughout the body via the aorta. Thus, since the pulmonary artery is connected to the right heart and the mitral valve is part of the left heart system, blood does not pass through the mitral valve when moving into the pulmonary artery.

9. What organelle is responsible for energy production in cells?

- A. Chloroplast
- B. Mitochondria**
- C. Lysosome
- D. Ribosome

The mitochondria are known as the powerhouse of the cell due to their critical role in energy production. They are responsible for converting nutrients into adenosine triphosphate (ATP) through the process of cellular respiration, which occurs in several stages: glycolysis, the citric acid cycle, and the electron transport chain. This ATP serves as the primary energy currency of the cell, providing the necessary power for various cellular functions. In contrast, chloroplasts, while important for energy production in plants through photosynthesis, mainly convert solar energy into chemical energy in the form of glucose, rather than directly producing ATP for cellular activities. Lysosomes function primarily as digestive organelles, breaking down waste materials and cellular debris. Additionally, ribosomes are essential for protein synthesis but do not play any direct role in energy production. Thus, the distinct functionality of mitochondria highlights their fundamental role in energy metabolism within cells.

10. Which nervous system is responsible for the body's fight or flight response?

- A. Peripheral
- B. Central
- C. Parasympathetic
- D. Sympathetic**

The nervous system responsible for the body's fight or flight response is the sympathetic nervous system. This system is part of the autonomic nervous system, which controls involuntary bodily functions. When a person faces a perceived threat, the sympathetic nervous system is activated, triggering a series of physiological changes that prepare the body to either confront or flee from the danger. These changes include an increase in heart rate, dilation of airways, and release of adrenaline, all aimed at enhancing physical performance and ensuring survival. The other options, while related to the nervous system, do not play the same role in the fight or flight response. The peripheral nervous system includes both the sympathetic and parasympathetic nervous systems, acting as a conduit for information between the central nervous system and the rest of the body. The central nervous system, comprised of the brain and spinal cord, oversees the overall processing of information but does not directly induce the fight or flight response. The parasympathetic nervous system, on the other hand, generally promotes a state of rest and relaxation, counteracting the effects of the sympathetic system. Therefore, when discussing the body's acute stress response, the sympathetic nervous system is clearly identified as the critical component.

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://teasscience.examzify.com>

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

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