

# Lithuanian University of Health Sciences (LSMU) Entrance Practice exam (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 hormones are produced by the anterior pituitary gland?**

- A. Melatonin and adrenaline**
- B. Growth hormone (GH) and thyroid-stimulating hormone (TSH)**
- C. Parathyroid hormone (PTH) and insulin**
- D. Oxytocin and antidiuretic hormone (ADH)**

**2. What is the primary structural function of the cell wall?**

- A. To facilitate intracellular communication**
- B. To surround the cell membrane and provide support**
- C. To assist in photosynthesis**
- D. To manage waste disposal**

**3. What is the chromosome count in a tetraploid organism?**

- A. 46 chromosomes**
- B. 68 chromosomes**
- C. 69 chromosomes**
- D. 92 chromosomes**

**4. What does the atomic number of an element represent?**

- A. The number of neutrons**
- B. The number of protons**
- C. The mass of the atom**
- D. The number of electrons**

**5. In an acid-base reaction, what does the term "salt" refer to?**

- A. A neutral compound formed from an acid**
- B. Only water**
- C. A weak base**
- D. A product of combustion**

**6. What is the function of DNA Primase in the DNA synthesis process?**

- A. To unwind the double helix**
- B. To create an RNA primer**
- C. To proofread the new DNA**
- D. To seal the fragments into a continuous strand**

**7. Which description best fits the characteristics of smooth muscle?**

- A. Voluntary and quick to fatigue**
- B. Voluntary and striated**
- C. Involuntary and non-striated**
- D. Involuntary and highly adaptable**

**8. Which enzyme is critical for the proofreading process during DNA synthesis?**

- A. Helicase**
- B. Primase**
- C. DNA Polymerase**
- D. Topoisomerase**

**9. Patau syndrome is associated with which chromosome number?**

- A. 21**
- B. 18**
- C. 13**
- D. 45**

**10. What is the consequence of applying Le Chatelier's Principle?**

- A. The position of equilibrium is affected.**
- B. The reaction rate increases.**
- C. The temperature remains constant.**
- D. The concentration of products decreases.**

## **Answers**

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

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## **Explanations**

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## 1. Which hormones are produced by the anterior pituitary gland?

- A. Melatonin and adrenaline
- B. Growth hormone (GH) and thyroid-stimulating hormone (TSH)**
- C. Parathyroid hormone (PTH) and insulin
- D. Oxytocin and antidiuretic hormone (ADH)

The anterior pituitary gland, also known as the adenohypophysis, is responsible for producing several key hormones that play vital roles in regulating various physiological functions. Growth hormone (GH) is one of the primary hormones produced by the anterior pituitary and is essential for growth, cellular reproduction, and regeneration. Thyroid-stimulating hormone (TSH) is another crucial hormone secreted by this gland; it stimulates the thyroid gland to produce thyroid hormones, which are critical for regulating metabolism, energy levels, and overall growth and development. The distinct functions of GH and TSH highlight their significance in the endocrine system's regulatory mechanisms. Specifically, GH influences growth and metabolic processes, while TSH is integral in controlling thyroid function. Other choices include hormones that are not produced by the anterior pituitary, thus emphasizing the specificity of hormone production within different glandular contexts in the body. Understanding the role and production of these hormones underlines the importance of the anterior pituitary in maintaining homeostasis and facilitating various bodily functions.

## 2. What is the primary structural function of the cell wall?

- A. To facilitate intracellular communication
- B. To surround the cell membrane and provide support**
- C. To assist in photosynthesis
- D. To manage waste disposal

The primary structural function of the cell wall is to surround the cell membrane and provide support. The cell wall is a rigid layer found outside the cell membrane in plant cells, fungi, and some bacteria. It provides mechanical strength, protecting cells from external pressure and preventing them from bursting when they take up water. This structural integrity is crucial for maintaining the shape of the cell and allows plants to grow upright. While other functions such as intracellular communication, assisting in photosynthesis, and managing waste disposal are essential for cellular activity, they do not define the primary role of the cell wall. The main focus of the cell wall is indeed its support and protective function, making option B the most accurate choice.

### 3. What is the chromosome count in a tetraploid organism?

- A. 46 chromosomes
- B. 68 chromosomes
- C. 69 chromosomes
- D. 92 chromosomes**

A tetraploid organism has four complete sets of chromosomes. In a diploid organism, which is the typical state for most humans and animals, there are two sets of chromosomes (one from each parent). For instance, humans have 46 chromosomes, or 23 pairs, which represents the diploid state. When we refer to a tetraploid condition, it means that the chromosome count has doubled to four sets. Therefore, if we know that a diploid organism has 46 chromosomes, a tetraploid version of that organism would have 4 times 23 chromosomes, leading to a total of 92 chromosomes. This is the reasoning behind why a tetraploid organism would be characterized by this chromosome count.

### 4. What does the atomic number of an element represent?

- A. The number of neutrons
- B. The number of protons**
- C. The mass of the atom
- D. The number of electrons

The atomic number of an element is defined as the number of protons found in the nucleus of an atom of that element. It is a fundamental property that uniquely identifies each element on the periodic table. For example, hydrogen, which has an atomic number of 1, has one proton, while carbon, with an atomic number of 6, has six protons. The atomic number is crucial because it determines not only the identity of the element but also its chemical properties and behavior. Additionally, in a neutral atom, the number of protons is equal to the number of electrons, which influences the atom's overall charge. However, the atomic number specifically refers to protons, distinguishing it from other concepts like atomic mass or neutron count, which pertain to different aspects of the atom's structure.

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**5. In an acid-base reaction, what does the term "salt" refer to?**

- A. A neutral compound formed from an acid**
- B. Only water**
- C. A weak base**
- D. A product of combustion**

In the context of an acid-base reaction, the term "salt" specifically refers to a neutral compound that is formed when an acid reacts with a base. This reaction typically involves the transfer of protons ( $H^+$ ) from the acid to the base, resulting in the formation of water and a salt. The salt is composed of the anion from the acid and the cation from the base, creating an ionic compound that is often soluble in water. Salt is a broad category that can include a variety of compounds, not just the common table salt (sodium chloride), highlighting its significance in various chemical reactions and processes. In other contexts, such as biological systems, salts play vital roles in maintaining cellular functions and osmotic balance. The other options do not accurately describe the term "salt" in the context of acid-base reactions: - Water is a product of the reaction but is not classified as a salt. - A weak base is not a product of the acid-base reaction; rather, it refers to a substance that can partially dissociate in solution to produce hydroxide ions. - Products of combustion typically involve organic compounds reacting with oxygen, resulting in products like carbon dioxide and water, which are not relevant to the definition of a salt

**6. What is the function of DNA Primase in the DNA synthesis process?**

- A. To unwind the double helix**
- B. To create an RNA primer**
- C. To proofread the new DNA**
- D. To seal the fragments into a continuous strand**

The function of DNA Primase in the DNA synthesis process is to create an RNA primer. During DNA replication, DNA polymerase, the enzyme responsible for synthesizing new DNA strands, cannot initiate the synthesis on its own; it requires a short segment of nucleic acid to serve as a starting point. DNA Primase synthesizes these short RNA primers, which are complementary to the DNA template strands, enabling DNA polymerase to attach and begin new DNA strand synthesis. Once the primer is in place, DNA polymerase can elongate the new DNA strand by adding nucleotides. This process is essential for the replication of both leading and lagging strands, ensuring that the DNA is accurately copied. The RNA primers are later removed and replaced with DNA, and the gaps are sealed by DNA ligase to create a continuous DNA strand. Thus, the creation of the RNA primer by DNA Primase is a crucial step in the overall DNA synthesis process.

**7. Which description best fits the characteristics of smooth muscle?**

- A. Voluntary and quick to fatigue**
- B. Voluntary and striated**
- C. Involuntary and non-striated**
- D. Involuntary and highly adaptable**

Smooth muscle is characterized by being involuntary and non-striated. This means it operates without conscious control, allowing it to function automatically in various bodily processes such as digestion, blood vessel regulation, and the contraction of various internal organs. The absence of striations, which are present in skeletal and cardiac muscle, reflects the arrangement of smooth muscle fibers, which are individually tapered and organized in a more uniform, smooth manner, lending to its name. Involuntary action is essential for maintaining homeostasis and responding to internal stimuli without the need for conscious thought, making smooth muscle crucial for processes that are vital for survival but do not require direct control, such as peristalsis in the intestines or regulating blood flow in blood vessels. The adaptability of smooth muscle allows it to maintain function under a wide range of conditions, such as varying degrees of stretch and tension, further supporting its role in different physiological contexts. Overall, the defining characteristics of smooth muscle make it a specialized and essential component of the muscular system.

**8. Which enzyme is critical for the proofreading process during DNA synthesis?**

- A. Helicase**
- B. Primase**
- C. DNA Polymerase**
- D. Topoisomerase**

The enzyme that is critical for the proofreading process during DNA synthesis is DNA polymerase. During DNA replication, DNA polymerase not only synthesizes new DNA strands by adding nucleotides complementary to the template strand, but it also has an intrinsic proofreading ability. This proofreading occurs through its 3' to 5' exonuclease activity, which allows the enzyme to remove incorrectly paired nucleotides immediately after they are added. This mechanism is essential for maintaining the fidelity of DNA replication and ensuring that errors in the DNA sequence are minimized, thus preserving genetic information. In contrast, helicase is responsible for unwinding the DNA double helix, allowing access for the replication machinery, while primase synthesizes short RNA primers that are necessary for DNA polymerase to initiate synthesis. Topoisomerase alleviates the torsional strain created ahead of the replication fork by cutting and rejoining DNA strands, but it does not play a direct role in the proofreading of newly synthesized DNA. Therefore, the unique proofreading function of DNA polymerase is why it is deemed critical in this process.

**9. Patau syndrome is associated with which chromosome number?**

- A. 21**
- B. 18**
- C. 13**
- D. 45**

Patau syndrome, also known as trisomy 13, is caused by the presence of an extra chromosome 13 in a person's genetic makeup. Normally, humans have two copies of each chromosome, but in Patau syndrome, there are three copies of chromosome 13. This additional chromosome leads to various physical and developmental abnormalities associated with the syndrome, such as severe intellectual disability, heart defects, and facial clefts. The connection to chromosome 13 is crucial for understanding the genetic basis of the condition and its implications. Identifying Patau syndrome as a trisomy of chromosome 13 helps medical professionals accurately diagnose the condition and provides a foundation for further studies into its effects and possible interventions. Other chromosome numbers mentioned, such as chromosomes 21 and 18, are associated with other conditions, like Down syndrome and Edwards syndrome, respectively, while chromosome 45 refers to an abnormality in the total number of chromosomes rather than a specific syndrome. The distinction emphasizes the importance of knowing the correct chromosome involved in a particular genetic disorder.

**10. What is the consequence of applying Le Chatelier's Principle?**

- A. The position of equilibrium is affected.**
- B. The reaction rate increases.**
- C. The temperature remains constant.**
- D. The concentration of products decreases.**

Le Chatelier's Principle states that if a dynamic equilibrium is disturbed by changing the conditions (such as concentration, temperature, or pressure), the system will respond to counteract that change and restore a new equilibrium. Therefore, the consequence of applying this principle is that the position of equilibrium is affected; the system shifts to favor either the reactants or the products depending on the nature of the change imposed. For example, if the concentration of reactants is increased, the system will shift to produce more products to counterbalance this change. Conversely, if the temperature of an exothermic reaction is increased, the equilibrium will shift toward the reactants to absorb the added heat. This principle is crucial in understanding how various factors can influence chemical reactions and their outcomes.

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

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

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