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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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

1. Which phase of the cell cycle is primarily focused on DNA replication?

A. Prophase

B. S phase

C. Metaphase

D. Telophase

2. Which hormone is secreted from the posterior pituitary?

A. Insulin

B. ADH

C. Prolactin

D. Dopamine

3. Which statement about steroid hormones is accurate?

A. They are soluble in water and act quickly

B. They are derived from cholesterol

C. They bind to surface receptors on the cell

D. They are produced in the pituitary gland

4. What does the process of reduction involve?

A. Loss of electrons

B. Gain of electrons

C. Increase in oxidation state

D. Decrease in energy

5. What is the role of RNA polymerase during transcription?

A. Replicates DNA strands

B. Breaks hydrogen bonds between complementary nucleotides

C. Adds matching DNA nucleotides

D. Decodes mRNA to produce proteins

6. What term describes mammals that produce living young from within the body?

A. Oviparous

B. Viviparous

C. Endothermic

D. Exothermic

7. What role does follicle stimulating hormone (FSH) play?

A. Stimulates secretion of testosterone

B. Regulates development, growth, and reproductive processes

C. Maintains calcium concentrations

D. Generates new organisms through fragmentation

8. What is the function of oxytocin produced by the hypothalamus?

A. Regulation of blood sugar levels

B. Control of adrenal response

C. Muscle contraction during labor

D. Growth stimulation

9. Which bond involves two identical elements sharing electrons equally?

A. Non-polar covalent bond

B. Hydrogen bond

C. Metallic bond

D. Dative covalent bond

10. What is a key difference between animal cells and plant cells?

A. Animal cells have a cell wall

B. Plant cells contain vacuoles

C. Animal cells lack chloroplasts

D. Plant cells have integral proteins

Answers

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

Explanations

1. Which phase of the cell cycle is primarily focused on DNA replication?

A. Prophase

B. S phase

C. Metaphase

D. Telophase

The phase of the cell cycle that is primarily focused on DNA replication is the S phase, also known as the synthesis phase. During this stage, the cell's DNA is replicated in preparation for cell division. It is crucial because each daughter cell needs to have an identical set of DNA to function properly after mitosis or meiosis. In the S phase, the cell ensures that all chromosomes are duplicated, which involves unwinding the double helix and using each strand as a template for creating a new partner strand. This process is vital for maintaining the genetic continuity between generations of cells. In contrast, the other phases do not focus on DNA replication. Prophase is marked by the condensation of chromatin into chromosomes and the formation of the mitotic spindle. Metaphase involves the alignment of chromosomes along the metaphase plate, and telophase is the stage where the cell begins to divide its cytoplasm and the nuclear membranes reform, concluding the cell division process. Thus, it is the S phase that is specifically dedicated to the critical task of replicating the DNA, making it the correct answer to the question.

2. Which hormone is secreted from the posterior pituitary?

A. Insulin

B. ADH

C. Prolactin

D. Dopamine

The hormone secreted from the posterior pituitary is antidiuretic hormone (ADH), also known as vasopressin. This hormone plays a crucial role in regulating water balance in the body by promoting water reabsorption in the kidneys. When the body's water levels are low, ADH is released from the posterior pituitary gland into the bloodstream, signaling the kidneys to retain more water, thus concentrating the urine and reducing the volume of water lost. In contrast, insulin is a hormone produced by the pancreas that regulates blood glucose levels, while prolactin, which is involved in lactation and reproductive functions, is secreted by the anterior pituitary. Dopamine is a neurotransmitter that functions in the brain and is involved in several important processes, but it is not secreted by the pituitary gland. Therefore, ADH is accurately identified as the hormone secreted from the posterior pituitary gland.

3. Which statement about steroid hormones is accurate?

A. They are soluble in water and act quickly

B. They are derived from cholesterol

C. They bind to surface receptors on the cell

D. They are produced in the pituitary gland

Steroid hormones are indeed derived from cholesterol, which is the correct statement. Cholesterol serves as the foundational molecule from which steroid hormones are synthesized. This group of hormones includes well-known examples such as cortisol, testosterone, and estrogen. Because they originate from a fat-based molecule, steroid hormones possess the ability to easily cross cell membranes, which are primarily composed of lipid layers. Once inside the cell, steroid hormones can bind to specific intracellular receptors, leading to changes in gene expression and producing longer-lasting effects compared to hormones that act through surface receptors. This characteristic of steroid hormones highlights their mode of action, which differs significantly from that of hormones that are water-soluble and bind to receptors on the cell surface. The other options present inaccuracies regarding the nature of steroid hormones. They are not soluble in water, which means they do not act quickly in the same manner as peptide hormones; they also do not bind to surface receptors, as they act on intracellular targets; and contrary to what one of the options suggests, steroid hormones are primarily produced in the adrenal glands, ovaries, and testes, rather than the pituitary gland, which produces peptide hormones.

4. What does the process of reduction involve?

A. Loss of electrons

B. Gain of electrons

C. Increase in oxidation state

D. Decrease in energy

The process of reduction involves the gain of electrons. In the context of redox (reduction-oxidation) reactions, reduction is defined specifically as the process whereby a substance acquires electrons. As a result of gaining electrons, the oxidation state of the element being reduced decreases. This is a fundamental concept in chemistry, as redox reactions are vital in various biological and chemical processes, including cellular respiration and energy production. Understanding reduction as a gain of electrons also frames it in contrast to oxidation, which involves the loss of electrons and an increase in oxidation state. This interplay between reduction and oxidation is crucial for maintaining the balance of electrical charge in chemical reactions, allowing for the conservation of matter and energy.

5. What is the role of RNA polymerase during transcription?

A. Replicates DNA strands

B. Breaks hydrogen bonds between complementary nucleotides

C. Adds matching DNA nucleotides

D. Decodes mRNA to produce proteins

The role of RNA polymerase during transcription primarily involves synthesizing RNA from a DNA template. During this process, RNA polymerase binds to the DNA at the promoter region and unwinds the DNA strands. It then synthesizes a single strand of RNA by adding RNA nucleotides that are complementary to the DNA template strand. The correct answer focuses on the importance of RNA polymerase accurately joining these RNA nucleotides to form a growing RNA chain, a key aspect of the transcription process. While it is involved in breaking the hydrogen bonds between DNA strands to allow access to the template strand for transcription, this breaking of bonds is a part of the mechanism that enables transcription to occur rather than the primary function of RNA polymerase itself. Options that suggest functions like replicating DNA strands or decoding mRNA are not associated with RNA polymerase's role in transcription. These processes are handled by other enzymes, such as DNA polymerase for replication, and ribosomes or other translation machinery for decoding mRNA. Therefore, the understanding of RNA polymerase's specific function in synthesizing RNA from a DNA template clarifies its essential role during transcription.

6. What term describes mammals that produce living young from within the body?

A. Oviparous

B. Viviparous

C. Endothermic

D. Exothermic

The term that describes mammals that produce living young from within the body is "viviparous." This characteristic distinguishes them from other reproductive strategies, such as laying eggs. In viviparous mammals, fertilization occurs internally, and the developing fetus is nourished directly through a placental connection or similar structure, allowing for greater protection and provision of nutrients during development. Oviparous, on the other hand, refers to organisms that lay eggs, which develop outside the mother's body. Endothermic and exothermic relate to temperature regulation in animals rather than their reproductive strategies. Endothermic animals, known as warm-blooded, maintain a constant body temperature through metabolic processes, while exothermic animals depend on external environmental conditions to regulate their body temperature. Thus, the designation of mammals that give birth to live young is uniquely defined by the term viviparous.

7. What role does follicle stimulating hormone (FSH) play?

A. Stimulates secretion of testosterone

B. Regulates development, growth, and reproductive processes

C. Maintains calcium concentrations

D. Generates new organisms through fragmentation

Follicle stimulating hormone (FSH) plays a crucial role in regulating various aspects of development and reproductive processes. In both females and males, FSH is essential for the development of gametes — the eggs in females and sperm in males. In females, FSH stimulates the growth and maturation of ovarian follicles, which are critical for ovulation and preparing the reproductive system for potential fertilization. In males, FSH acts on Sertoli cells in the testes, promoting spermatogenesis, which is the production and maturation of sperm. Overall, FSH is key in the endocrine and reproductive systems, facilitating the normal functioning of processes related to growth, development, and reproduction in the body, making choice B the most accurate answer.

8. What is the function of oxytocin produced by the hypothalamus?

A. Regulation of blood sugar levels

B. Control of adrenal response

C. Muscle contraction during labor

D. Growth stimulation

Oxytocin, produced by the hypothalamus and secreted by the posterior pituitary gland, plays a critical role in various physiological processes, particularly during childbirth. Its primary function involves stimulating uterine contractions during labor, which facilitate the delivery of the baby. This hormone acts on the smooth muscle of the uterus, causing rhythmic contractions that help to push the baby through the birth canal. In addition to its role in childbirth, oxytocin is also associated with bonding and social behaviors, often referred to as the "love hormone" due to its involvement in processes like maternal bonding and emotional connections between individuals. However, its immediate and specific function in the context of this question is the promotion of muscle contraction during labor, making it the correct answer. The other options do not accurately reflect the known functions of oxytocin: it does not have a direct role in regulating blood sugar levels, controlling the adrenal response, or stimulating growth, which are functions primarily associated with other hormones and systems in the body.

9. Which bond involves two identical elements sharing electrons equally?

A. Non-polar covalent bond

B. Hydrogen bond

C. Metallic bond

D. Dative covalent bond

The bond that involves two identical elements sharing electrons equally is a non-polar covalent bond. In a non-polar covalent bond, the atoms involved have the same electronegativity, meaning they have the same ability to attract electrons. Consequently, when these identical elements share electrons, there is no charge separation, and the distribution of electron density is even. This equal sharing results in a stable bond where neither atom becomes partially positive or negative, which is characteristic of non-polar molecules. A common example of a non-polar covalent bond is the diatomic molecule of hydrogen (H2), where two hydrogen atoms share a pair of electrons equally. The other types of bonds listed do not share electrons equally between identical elements. Hydrogen bonds are weak interactions that occur between polar molecules, often involving hydrogen atoms. Metallic bonds involve a "sea of electrons" shared among a lattice of metal atoms, without the concept of equal sharing between identical atoms. Dative covalent bonds involve one atom donating both electrons to the bond, which does not meet the criteria of equal sharing between identical elements.

10. What is a key difference between animal cells and plant cells?

A. Animal cells have a cell wall

B. Plant cells contain vacuoles

C. Animal cells lack chloroplasts

D. Plant cells have integral proteins

A key difference that underscores the distinction between animal cells and plant cells is that animal cells lack chloroplasts. Chloroplasts are specialized organelles found in plant cells that enable the process of photosynthesis, allowing plants to convert light energy into chemical energy stored in glucose. This organelle contains chlorophyll, which is essential for this conversion and gives plants their green color. While it's true that plant cells contain larger central vacuoles, which serve to maintain turgor pressure and store substances, animal cells typically have smaller vacuoles. Additionally, plant cells possess a cell wall made of cellulose that provides structural support, which is not found in animal cells. Integral proteins are present in both plant and animal cells, playing vital roles in cellular functions like transport and communication. Understanding the presence of chloroplasts in plant cells but absence in animal cells is fundamental to the differing roles these cells play in their respective organisms, particularly in relation to energy production and the process of photosynthesis.

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://lsmuentrance.examzify.com

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