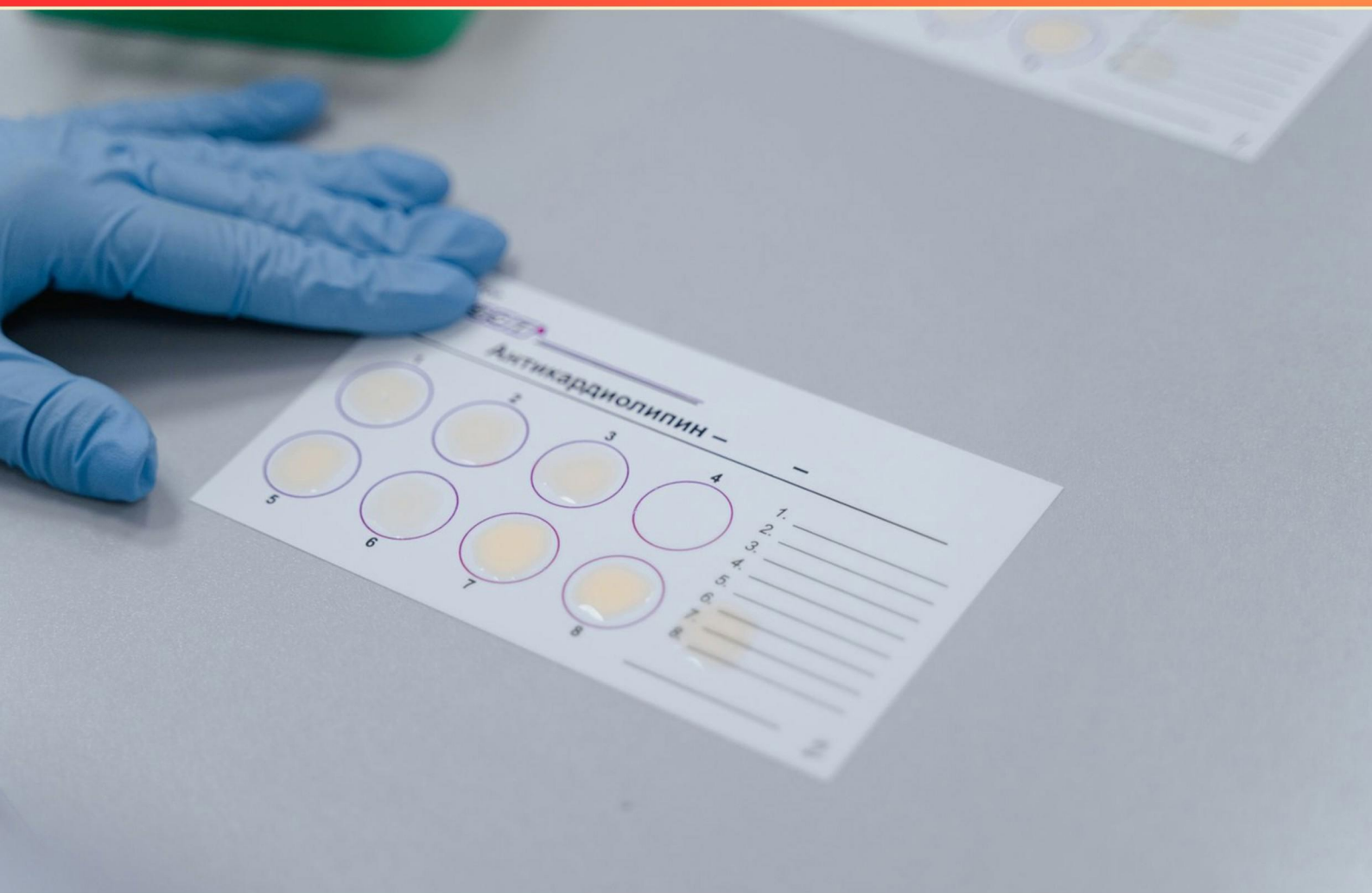


T LEVEL BIOLOGY PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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. How are the chromosomes separated during cell division?**
 - A. By the mitochondria
 - B. Using microtubules from the centrioles
 - C. Through diffusion
 - D. By the Golgi apparatus
- 2. Which cancer is associated with lymph nodes that test positive?**
 - A. Prostate Cancer
 - B. Breast Cancer
 - C. Lung Cancer
 - D. Acute Myeloid Leukaemia
- 3. Short bones in the skeletal system are primarily responsible for what?**
 - A. Weight support
 - B. Providing stability
 - C. Allowing for extensive movement
 - D. Facilitating blood production
- 4. Which structure in a cell is known for detoxifying harmful substances?**
 - A. Smooth endoplasmic reticulum
 - B. Nucleus
 - C. Centrioles
 - D. Ribosomes
- 5. What tissue type primarily composes fascia?**
 - A. Adipose tissue
 - B. Cartilage tissue
 - C. Strong areolar tissue
 - D. Dense fibrous tissue
- 6. What type of epithelium is made up of very thin cells to facilitate diffusion?**
 - A. Cuboidal epithelium
 - B. Columnar epithelium
 - C. Squamous epithelium
 - D. Compound epithelium

7. What is the main characteristic of Chronic Obstructive Pulmonary Disease (COPD)?

- A. Reversible airflow obstruction
- B. Chronic obstruction of lung airflow
- C. Absolute lung capacity increase
- D. Excess production of red blood cells

8. What is the first stage in the conduction pathway of the heart?

- A. Impulse travels down the Bundle of His
- B. Atrioventricular node fires
- C. Sinoatrial node fires
- D. Impulse travels along Purkinje fibres

9. What type of membrane structure surrounds the mitochondria?

- A. Single layer of phospholipids
- B. Two layers of phospholipids
- C. Triple layer of proteins
- D. None of the above

10. When should a bilateral mastectomy be considered?

- A. After a lumpectomy
- B. If there are multiple tumors or a large tumor present
- C. Only when cancer is stage 0
- D. When there is no family history of breast cancer

Answers

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

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Explanations

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1. How are the chromosomes separated during cell division?

- A. By the mitochondria
- B. Using microtubules from the centrioles**
- C. Through diffusion
- D. By the Golgi apparatus

During cell division, chromosomes are separated by microtubules, which are structures formed from the protein tubulin. Microtubules are part of the cytoskeleton and play a crucial role in the process of mitosis, the type of cell division that leads to the formation of two identical daughter cells. During mitosis, the microtubules are organized into a structure called the mitotic spindle. This spindle fibers extend from the centrosomes, which are regions of the cell that contain the centrioles. The microtubules attach to the centromeres of the chromosomes and pull the sister chromatids apart toward opposite poles of the cell. This separation is essential for ensuring that each daughter cell receives the correct number of chromosomes, maintaining genetic stability. The involvement of mitochondria, diffusion, or the Golgi apparatus does not play a direct role in the mechanical separation of chromosomes. Mitochondria are responsible for energy production, diffusion pertains to the movement of molecules across membranes, and the Golgi apparatus is involved in processing and packaging proteins and lipids but not in chromosome separation. Thus, the function of microtubules from the centrioles is critical in orchestrating the accurate and equal distribution of chromosomes during cell division.

2. Which cancer is associated with lymph nodes that test positive?

- A. Prostate Cancer
- B. Breast Cancer**
- C. Lung Cancer
- D. Acute Myeloid Leukaemia

Breast cancer is often associated with lymph nodes that test positive because it has a tendency to metastasize, or spread, to nearby lymph nodes, particularly those in the axillary (armpit) region. The involvement of lymph nodes is a common way to assess the stage of breast cancer and to understand the extent of the disease. When breast cancer cells spread to lymph nodes, they can often be detected during procedures like sentinel lymph node biopsy or axillary dissection, where the status of these lymph nodes can provide critical information about prognosis and treatment planning. In contrast, while other types of cancer (such as prostate or lung cancer) can also spread to lymph nodes, the specific association with testing positive in lymph nodes is particularly prominent in breast cancer. Acute Myeloid Leukaemia typically affects the bone marrow and blood rather than solid tumors that localize and spread to lymph nodes, making it less relevant in this context. Therefore, the strong link between breast cancer and positive lymph nodes makes it the best answer for this question.

3. Short bones in the skeletal system are primarily responsible for what?

- A. Weight support
- B. Providing stability**
- C. Allowing for extensive movement
- D. Facilitating blood production

Short bones play a significant role in providing stability and support within the skeletal system. These bones are typically about as wide as they are long and include the bones of the wrist and ankle. Their structure is optimized for stability, allowing them to bear weight and distribute forces across multiple joints. While they do contribute to movement in a limited capacity due to their range of motion, their main function is not to facilitate extensive movement like long bones or joints do. Moreover, while certain bones in the body are involved in blood production, particularly those within the long bones, short bones primarily do not serve this purpose. Overall, the essential function of short bones centers on stability rather than movement or weight support alone.

4. Which structure in a cell is known for detoxifying harmful substances?

A. Smooth endoplasmic reticulum

B. Nucleus

C. Centrioles

D. Ribosomes

The smooth endoplasmic reticulum (SER) plays a crucial role in detoxifying harmful substances within the cell. This organelle is involved in various metabolic processes, including the metabolism of carbohydrates and lipids. One of the key functions of the SER is to convert harmful byproducts of metabolism into less toxic compounds, which can then be excreted from the cell or converted into forms that the body can safely use. The presence of enzymes in the smooth endoplasmic reticulum facilitates this detoxification process. In contrast, the nucleus primarily functions as the control center of the cell, housing genetic material and coordinating activities such as gene expression and cell division. Centrioles are involved in cell division, specifically in the formation of spindle fibers that separate chromosomes, and do not have a role in detoxification. Ribosomes are responsible for protein synthesis, translating messenger RNA into proteins, but they do not engage in detoxifying activities. Thus, the unique functions of the smooth endoplasmic reticulum make it the central structure for detoxifying harmful substances in the cell.

5. What tissue type primarily composes fascia?

A. Adipose tissue

B. Cartilage tissue

C. Strong areolar tissue

D. Dense fibrous tissue

Fascia is primarily composed of dense fibrous tissue, which provides both strength and support. This tissue type consists of closely packed collagen fibers that are oriented in parallel to one another, enabling fascia to efficiently withstand tension and force. Fascia serves an important role in the organization of muscles, nerves, and blood vessels and helps to separate and compartmentalize different structures within the body. The composition of dense fibrous tissue allows fascia to maintain its integrity and durability under various physical conditions, making it a critical component of the musculoskeletal system. Understanding the role of dense fibrous tissue in fascia helps to clarify its importance in maintaining structural stability and facilitating movement across different parts of the body.

6. What type of epithelium is made up of very thin cells to facilitate diffusion?

A. Cuboidal epithelium

B. Columnar epithelium

C. Squamous epithelium

D. Compound epithelium

The type of epithelium made up of very thin cells that facilitates diffusion is squamous epithelium. This epithelium consists of flattened cells, which allow for a minimal barrier for the passage of substances. Because of their thinness and broad surface area, squamous cells are particularly adept at allowing gases, nutrients, and wastes to diffuse across them, making them ideal for locations in the body where rapid exchange is essential, such as the alveoli in the lungs and the lining of blood vessels (endothelium). The design of squamous epithelium maximizes efficiency and speed of diffusion, which is critical for maintaining homeostasis in various physiological processes.

7. What is the main characteristic of Chronic Obstructive Pulmonary Disease (COPD)?

- A. Reversible airflow obstruction
- B. Chronic obstruction of lung airflow**
- C. Absolute lung capacity increase
- D. Excess production of red blood cells

Chronic Obstructive Pulmonary Disease (COPD) is primarily characterized by chronic obstruction of airflow in the lungs. This obstruction is typically progressive and associated with an abnormal inflammatory response of the lungs due to harmful particles or gases, most commonly from smoking. The key aspect that defines COPD is the impairment in airflow that does not fully reverse, distinguishing it from other respiratory conditions. Patients often experience a limitation in airflow during both exhalation and inhalation, leading to difficulty breathing, especially during physical activity. Moreover, while there may be other related conditions or symptoms, such as changes in lung volumes or erythropoiesis due to chronic hypoxemia, these do not define COPD as directly as the chronic airflow obstruction does. Understanding this core characteristic is crucial for diagnosing and managing COPD effectively.

8. What is the first stage in the conduction pathway of the heart?

- A. Impulse travels down the Bundle of His
- B. Atrioventricular node fires
- C. Sinoatrial node fires**
- D. Impulse travels along Purkinje fibres

The first stage in the conduction pathway of the heart is when the sinoatrial (SA) node fires. The SA node, commonly referred to as the heart's natural pacemaker, is responsible for initiating the electrical impulses that regulate the heartbeat. When the SA node fires, it generates an electrical impulse that causes the atria to contract, pushing blood into the ventricles. This initial electrical impulse sets the rhythm of the heart and is crucial for maintaining a coordinated heart rhythm. Following this, the impulse travels to the atrioventricular (AV) node, then to the Bundle of His, and finally along the Purkinje fibers, leading to ventricular contraction. Each step follows the initial action of the SA node, but the firing of the SA node is the essential starting point of the conduction pathway. Understanding this sequence is fundamental to grasping how the heart beats effectively.

9. What type of membrane structure surrounds the mitochondria?

- A. Single layer of phospholipids
- B. Two layers of phospholipids**
- C. Triple layer of proteins
- D. None of the above

Mitochondria are surrounded by a double membrane structure, composed of two layers of phospholipids. This bilayer is essential for the mitochondria's function as it creates distinct compartments within the organelle, allowing for different biochemical processes to occur simultaneously and efficiently. The outer membrane is smooth and permeable to ions and small molecules, while the inner membrane is highly folded into structures called cristae, which house the proteins involved in the electron transport chain and ATP synthesis. This arrangement is crucial for the mitochondria's role in cellular respiration and energy production. The presence of a double layer of phospholipids is a defining characteristic of organelles like mitochondria, distinguishing them from simpler structures that may consist of single membranes or other configurations.

10. When should a bilateral mastectomy be considered?

- A. After a lumpectomy
- B. If there are multiple tumors or a large tumor present**
- C. Only when cancer is stage 0
- D. When there is no family history of breast cancer

A bilateral mastectomy should be considered if there are multiple tumors or a large tumor present in one or both breasts. This surgical option may be recommended to reduce the risk of cancer spreading and to remove as much breast tissue as possible if there is significant concern about the extent of the disease. This is particularly relevant when the cancer is aggressive or multifocal, meaning there are several areas of cancer within the breast. This approach is part of a proactive management strategy, especially in cases where a patient's breast cancer diagnosis suggests a higher risk of recurrence or metastasis. The decision to choose bilateral mastectomy often involves a discussion about the stage and characteristics of the tumors, patient age, and personal health factors. In contrast, other options such as after a lumpectomy, only when cancer is stage 0, or when there is no family history of breast cancer do not adequately reflect the clinical rationale for this extensive procedure.

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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://tlevelbiology.examzify.com>

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

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