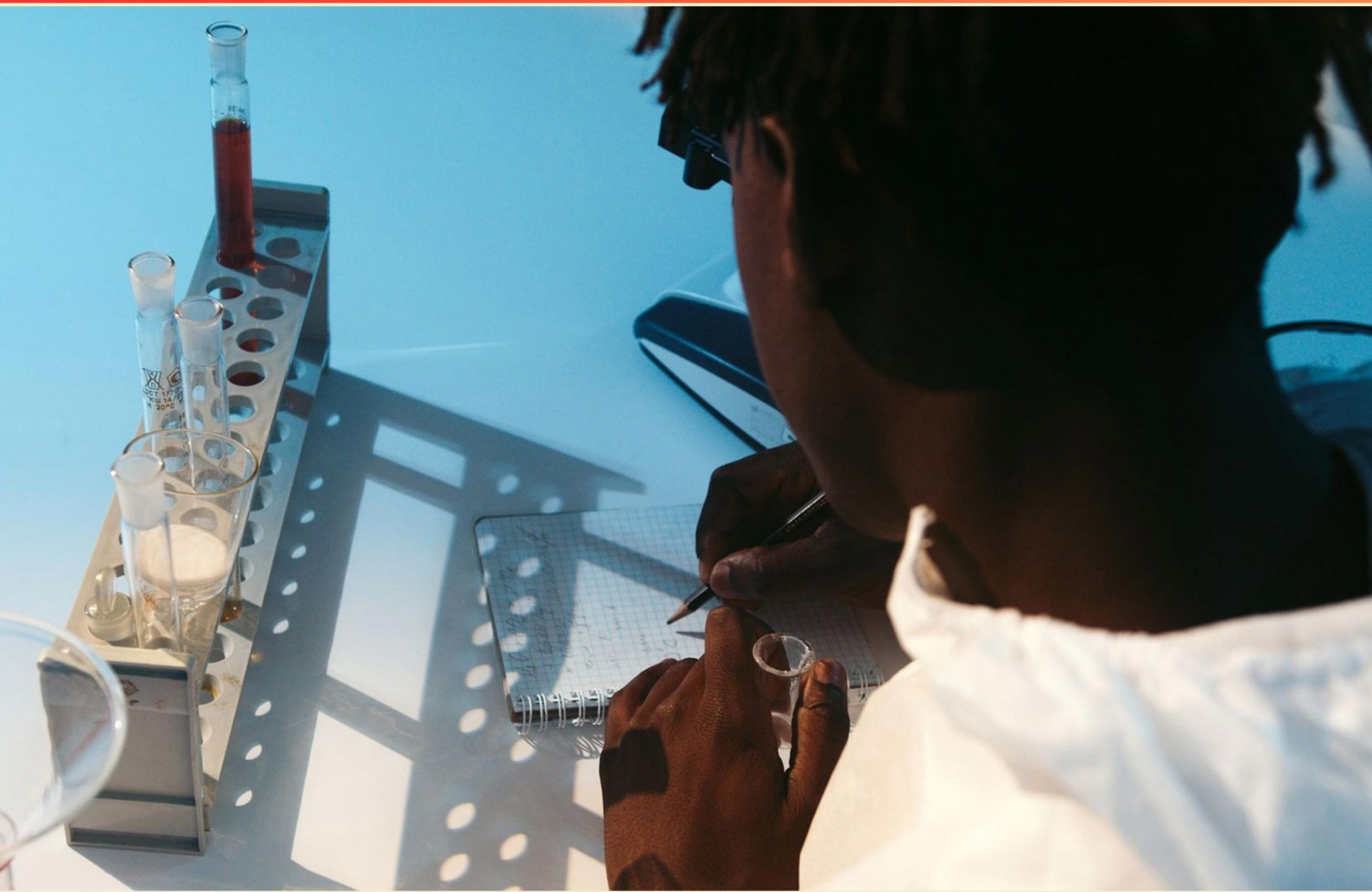


ONTARIO GRADE 11 UNIVERSITY BIOLOGY PRACTICE TEXT (SAMPLE)

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 does ecosystem diversity encompass?**
 - A. The variation of genetic traits within species
 - B. The variety of ecosystems in the biosphere
 - C. The interactions of species within an ecosystem
 - D. The population sizes of various species
- 2. What is a chromosome primarily made up of?**
 - A. RNA
 - B. Proteins
 - C. DNA
 - D. Carbohydrates
- 3. What is the name for the volume of air inhaled or exhaled in a normal breath?**
 - A. Inspiratory Reserve Volume
 - B. Expiratory Reserve Volume
 - C. Vital Capacity
 - D. Tidal Volume
- 4. What is the smallest blood vessel in the human body?**
 - A. Artery
 - B. Vein
 - C. Capillary
 - D. Venule
- 5. What is the main function of mucous membranes in the respiratory system?**
 - A. Oxygen exchange
 - B. Sound production
 - C. Moistening and filtering air
 - D. Regulation of airflow

6. Which branch of biology focuses on the structure and form of organisms?

- A. Ecology
- B. Anatomy
- C. Genetics
- D. Physiology

7. What is the term for one of two identical chromosomes held together at a centromere?

- A. Spindle fibre
- B. Homologous chromosome
- C. Gamete
- D. Zygote

8. What is the exchange of gases between the blood and the cells of the body known as?

- A. Ventilation
- B. External respiration
- C. Internal respiration
- D. Diffusion

9. What happens during exhalation?

- A. Air is taken into the lungs
- B. Oxygen is absorbed in the bloodstream
- C. Carbon dioxide is expelled from the lungs
- D. Food is passed from the stomach to the intestines

10. What is a karyotype?

- A. A structure that forms spindle fibres
- B. A photograph of pairs of homologous chromosomes in a cell
- C. A type of haploid cell
- D. A diploid organism

Answers

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

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Explanations

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1. What does ecosystem diversity encompass?

- A. The variation of genetic traits within species
- B. The variety of ecosystems in the biosphere**
- C. The interactions of species within an ecosystem
- D. The population sizes of various species

Ecosystem diversity refers to the variety of different ecosystems that can be found within a certain area or across the planet. This diversity includes variations in habitats, communities, and ecological processes. It emphasizes the range of different ecosystems such as forests, wetlands, grasslands, and deserts, each with its unique set of organisms that interact with one another and their environment. Understanding ecosystem diversity is crucial because it highlights the complexity of interactions within the biosphere and the resilience of natural systems. A higher diversity of ecosystems often contributes to greater overall biodiversity, which can enhance ecological stability and provide various ecosystem services. The other options focus on different aspects of biological diversity. Genetic diversity pertains to the genetic traits within a species, which is distinct from ecosystem diversity. The interactions of species within an ecosystem are important ecological dynamics but do not directly define the diversity of ecosystems themselves. Population sizes of various species pertain to species-level diversity rather than the diversity of ecosystems. Thus, the essence of ecosystem diversity is best captured by the variety of ecosystems present in the biosphere.

2. What is a chromosome primarily made up of?

- A. RNA
- B. Proteins
- C. DNA**
- D. Carbohydrates

A chromosome is primarily composed of DNA. DNA, or deoxyribonucleic acid, is the molecule that carries the genetic information necessary for the growth, development, functioning, and reproduction of all living organisms. Within the structure of a chromosome, DNA is tightly coiled and packaged around proteins known as histones. This organization helps to condense the DNA to fit within the nucleus of the cell, while also playing a crucial role in regulating gene expression and DNA replication. While proteins are indeed a part of the chromosome structure, serving as scaffolding that supports the DNA, it is the DNA itself that is the fundamental component that encodes genetic information. RNA, while involved in protein synthesis and other cellular functions, is not a primary component of chromosomes. Carbohydrates do not play a direct role in the composition of chromosomes, although they may be present in small amounts as components of nucleotides. Overall, the defining characteristic of a chromosome is the presence of DNA.

3. What is the name for the volume of air inhaled or exhaled in a normal breath?

- A. Inspiratory Reserve Volume
- B. Expiratory Reserve Volume
- C. Vital Capacity
- D. Tidal Volume**

The term for the volume of air inhaled or exhaled during a normal breath is known as Tidal Volume. This measures the amount of air that moves in and out of the lungs with each respiratory cycle when the body is at rest and is a fundamental aspect of understanding respiratory physiology. In context, Inspiratory Reserve Volume refers to the additional air that can be inhaled after a normal inhalation, while Expiratory Reserve Volume is the extra air that can be forcibly exhaled after a normal exhalation. Vital Capacity is a broader measurement that combines the maximum amount of air expelled from the lungs after maximum inhalation and is thus not specific to a single breath cycle. Tidal Volume, therefore, specifically captures the essence of normal, everyday breathing patterns without additional effort.

4. What is the smallest blood vessel in the human body?

- A. Artery
- B. Vein
- C. Capillary**
- D. Venule

The smallest blood vessels in the human body are capillaries. These tiny, thin-walled vessels are crucial for the exchange of substances between the blood and surrounding tissues. Capillaries connect arterioles (small arteries) to venules (small veins), facilitating the delivery of oxygen and nutrients to cells while also allowing for the removal of carbon dioxide and waste products. The key characteristic that defines capillaries is their microscopic size, which allows them to penetrate tissues and form networks, thereby maximizing surface area for efficient exchange. Their walls are composed of a single layer of endothelial cells, making them highly permeable and ideal for diffusion. This structural feature distinguishes them from arteries, veins, and venules, which are generally larger and have more complex structures to accommodate higher blood pressures and volumes.

5. What is the main function of mucous membranes in the respiratory system?

- A. Oxygen exchange
- B. Sound production
- C. Moistening and filtering air**
- D. Regulation of airflow

The main function of mucous membranes in the respiratory system is to moisten and filter the air that we breathe. These membranes are lined with mucus-producing cells that secrete mucus, which serves several important roles. Firstly, the mucus traps dust, pathogens, and other airborne particles, helping to purify the air before it reaches the lungs. This is crucial for preventing infections and maintaining respiratory health. Secondly, by adding moisture to the air, the mucous membranes help to prevent the respiratory tissues from drying out, which can lead to irritation and increased vulnerability to infection. This function of mucous membranes is vital, as it supports efficient gas exchange in the lungs by ensuring that the air is not only clean but also optimally conditioned. Without adequate moisture and filtration, the respiratory system could be more prone to inflammation and infection, negatively impacting overall health.

6. Which branch of biology focuses on the structure and form of organisms?

- A. Ecology
- B. Anatomy**
- C. Genetics
- D. Physiology

The branch of biology that focuses on the structure and form of organisms is anatomy. Anatomy involves the study of the physical structure of organisms, including their organs, tissues, and systems. It provides insights into how these structures function and interact, which is crucial for understanding overall organism health and functionality. Anatomy can be further divided into various subdisciplines, such as gross anatomy, which examines large structures visible to the naked eye, and microscopic anatomy, which explores structures at the cellular level. By studying anatomy, scientists and medical professionals are better equipped to understand disease processes, developmental biology, and evolutionary relationships among different species. The other options represent different areas of biological study. Ecology focuses on the interactions between organisms and their environments, genetics deals with heredity and the variation of traits, and physiology examines the functions and processes of living organisms. While these fields are all important in biology, they do not primarily focus on the structural aspects that anatomy investigates.

7. What is the term for one of two identical chromosomes held together at a centromere?

- A. Spindle fibre**
- B. Homologous chromosome
- C. Gamete
- D. Zygote

The correct term for one of two identical chromosomes held together at a centromere is not spindle fibre, but rather sister chromatids. During cell division, specifically in the phases of mitosis and meiosis, chromosomes are duplicated and each duplicated chromosome is referred to as a sister chromatid. The centromere is the region where these two sister chromatids are joined together, allowing them to be pulled apart into two new cells during division. Spindle fibres, found in the process of cell division, are the structures that help separate the chromosomes but do not refer to the chromosomes themselves. Homologous chromosomes are pairs of chromosomes containing the same genes but possibly different alleles, and they do not refer to identical chromosomes since they originate from different parents. A gamete is a reproductive cell (sperm or egg), and a zygote is the cell formed when two gametes fuse during fertilization; neither term applies to the sister chromatids concept related to the centromere.

8. What is the exchange of gases between the blood and the cells of the body known as?

- A. Ventilation
- B. External respiration
- C. Internal respiration**
- D. Diffusion

The exchange of gases between the blood and the cells of the body is referred to as internal respiration. This process involves the uptake of oxygen by the cells for metabolic processes and the release of carbon dioxide, which is a byproduct of cellular respiration. Internal respiration occurs at the cellular level, where oxygen diffuses from the blood into the body cells, and carbon dioxide, produced by the cells, diffuses back into the bloodstream. This is distinct from external respiration, which encompasses the exchange of gases between the air in the lungs and the blood. Therefore, internal respiration specifically addresses the interactions between circulating blood and the cells, making it the correct term for this process. Ventilation refers to the mechanical process of moving air in and out of the lungs, while diffusion is a broader scientific term that describes the movement of molecules from an area of higher concentration to an area of lower concentration; it is a mechanism that facilitates both internal and external respiration but does not specifically define the gas exchange that occurs between blood and body cells.

9. What happens during exhalation?

- A. Air is taken into the lungs
- B. Oxygen is absorbed in the bloodstream
- C. Carbon dioxide is expelled from the lungs**
- D. Food is passed from the stomach to the intestines

During exhalation, the primary function is the expulsion of carbon dioxide from the lungs. This process occurs as the diaphragm and the intercostal muscles relax after inhalation, decreasing the thoracic cavity's volume and increasing the pressure inside the lungs. This pressure change forces the air, which is rich in carbon dioxide (a waste product of cellular metabolism), out of the lungs and into the environment. The removal of carbon dioxide is essential for maintaining the body's acid-base balance and ensuring that oxygen can be efficiently utilized in the body. In contrast, inhalation, which is about taking in air, involves the intake of oxygen, not the expulsion of carbon dioxide. The absorption of oxygen into the bloodstream occurs during inhalation, as gases diffuse across the alveolar membrane. Finally, food passing from the stomach to the intestines is unrelated to the respiratory system and pertains to the digestive system, highlighting the specificity of physiological processes in different body systems.

10. What is a karyotype?

- A. A structure that forms spindle fibres
- B. A photograph of pairs of homologous chromosomes in a cell**
- C. A type of haploid cell
- D. A diploid organism

A karyotype is defined as a photograph of pairs of homologous chromosomes in a cell. This technique is often used in genetics to examine the number and structure of chromosomes, providing insight into chromosomal abnormalities or genetic disorders. In a karyotype, chromosomes are typically arranged in pairs based on size, shape, and the position of the centromere, allowing for easy comparison and analysis. Karyotyping is essential in medical diagnostics, as it helps identify conditions such as Down syndrome, which is caused by the presence of an extra chromosome 21. By visualizing the chromosomes, scientists and clinicians can determine whether the typical chromosomal number, which is 46 in humans (23 pairs), is maintained or if there are deviations. In contrast, the other choices refer to different biological concepts: spindle fibers are involved in chromosome movement during cell division, a haploid cell contains only one set of chromosomes (like gametes), and a diploid organism has two sets of chromosomes, which does not specifically refer to the organization or visualization of chromosomes present in a karyotype. Therefore, identifying a karyotype as a photograph of homologous chromosomes accurately captures its definition and purpose in genetics.

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://ontariograde11bio.examzify.com>

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

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