

LEAVING CERTIFICATE BIOLOGY PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

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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. Depositing of sperm in the vagina using the penis**
 - A. Fertilisation
 - B. Conception
 - C. Gestation
 - D. Copulation

- 2. Having two different alleles for a gene is described as**
 - A. Heterozygous
 - B. Homozygous
 - C. Monohybrid
 - D. Polygenic

- 3. Excretion is the removal of which from the body?**
 - A. Oxygen
 - B. Hormones
 - C. Metabolic wastes
 - D. Nutrients

- 4. Male part of the flower consists of filament and anther**
 - A. Carpel
 - B. Pistil
 - C. Ovary
 - D. Stamen

- 5. What is the process of converting ammonia into nitrite and then nitrate called?**
 - A. Nitrification
 - B. Denitrification
 - C. Ammonification
 - D. Nitrogen fixation

- 6. An automatic action not under conscious control is a**
 - A. Reflex action
 - B. Neuron
 - C. Hormone
 - D. White matter

- 7. Which term describes the molecule formed during transcription that carries the genetic code to the ribosome?**
- A. Heredity
 - B. Genetic screening
 - C. mRNA
 - D. Alleles
- 8. Which process involves movement of molecules from low to high concentration and requires energy?**
- A. Diffusion
 - B. Osmosis
 - C. Active transport
 - D. Filtration
- 9. Which process returns nitrogen to the atmosphere by converting nitrates into nitrogen gas?**
- A. Nitrification
 - B. Nitrogen fixation
 - C. Ammonification
 - D. Denitrification
- 10. What term describes a group of tissues carrying out a common function?**
- A. Symbiosis
 - B. Organ
 - C. Cytoplasm
 - D. Diffusion

Answers

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

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Explanations

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1. Depositing of sperm in the vagina using the penis

- A. Fertilisation
- B. Conception
- C. Gestation
- D. Copulation**

The main idea here is the physical act of sexual intercourse, which is called copulation. Copulation is the process in which the penis is inserted into the vagina and semen is deposited, making sperm available in the female reproductive tract for potential fertilisation. This is different from fertilisation, which is the actual joining of a sperm and an egg, or from conception, which refers to the moment a pregnancy begins after the embryo implants. Gestation is the period of the pregnancy itself. So the term that best fits "Depositing of sperm in the vagina using the penis" is copulation, the act that enables possible fertilisation to occur later.

2. Having two different alleles for a gene is described as

- A. Heterozygous**
- B. Homozygous
- C. Monohybrid
- D. Polygenic

Having two different alleles for a gene means the genotype is heterozygous. In diploid organisms, you inherit one allele from each parent at the same gene locus, and if those alleles are different forms of the gene, that combination is heterozygous. If the two alleles were identical, that would be homozygous. Monohybrid refers to studying inheritance for a single gene, and polygenic describes traits influenced by many genes, so they're about patterns of inheritance or the number of genes involved, not the identity of the two alleles at one locus.

3. Excretion is the removal of which from the body?

- A. Oxygen
- B. Hormones
- C. Metabolic wastes**
- D. Nutrients

Excretion is the removal of metabolic wastes from the body. As cells carry out metabolism, they produce waste products that can be toxic if they build up. The excretory systems—kidneys, liver, lungs, and skin—work to dispose of these wastes: urea and other nitrogenous wastes from the breakdown of proteins, excess salts and water, and gases like carbon dioxide from respiration. Removing these wastes helps keep the internal environment stable, including proper fluid balance and pH. Oxygen is something the body uses to release energy, not a waste to be expelled. Hormones are signalling molecules released by glands in a controlled way, not wastes in the sense of excretory waste, though some can be eliminated in urine to regulate body chemistry. Nutrients are absorbed and used by the body rather than being wastes. So the term that describes what is removed by excretion is metabolic wastes.

4. Male part of the flower consists of filament and anther

- A. Carpel
- B. Pistil
- C. Ovary
- D. Stamen**

The male reproductive part of a flower is the stamen. It is made up of two pieces: a filament, which is the slender stalk that positions the other part, and an anther, the sac at the tip where pollen grains form. In the anther, pollen sacs develop pollen through cell division, and when mature the anther releases pollen so it can be carried to the female part for fertilization. This is distinct from the female structure, which is the carpel (also called the pistil) that includes the stigma, style, and ovary, with ovules inside the ovary. So the statement describes the stamen, the male part.

5. What is the process of converting ammonia into nitrite and then nitrate called?

- A. Nitrification**
- B. Denitrification
- C. Ammonification
- D. Nitrogen fixation

Nitrification is the conversion of ammonia into nitrite and then nitrate through two linked oxidation steps carried out by specialized bacteria. In the first step, ammonia-oxidizing bacteria take ammonia (NH_3) and oxidize it to nitrite (NO_2^-), gaining energy in the process. In the second step, nitrite-oxidizing bacteria convert nitrite to nitrate (NO_3^-), releasing more energy. Both steps require oxygen, so this process happens under aerobic conditions. This distinguishes nitrification from ammonification, which releases ammonia during decomposition; from denitrification, which reduces nitrate to nitrogen gas under low-oxygen conditions; and from nitrogen fixation, which converts atmospheric N_2 into ammonia.

6. An automatic action not under conscious control is a

- A. Reflex action**
- B. Neuron
- C. Hormone
- D. White matter

An automatic action not under conscious control is a reflex action. Reflex actions are rapid, involuntary responses to a stimulus that protect the body. They work through a reflex arc that connects a receptor to an effector via neurons, often bypassing higher brain processing so the response is produced quickly. A classic example is the knee-jerk reflex, where the stimulus is detected by receptors, signals travel through a sensory neuron to the spinal cord, and a motor neuron triggers the muscle to contract without conscious thought. This speed and automaticity are what set reflex actions apart from deliberate actions. The other terms describe things rather than actions: a neuron is a nerve cell, a hormone is a chemical messenger that travels in the blood, and white matter is a brain tissue composed of myelinated nerve fibers, not an automatic response.

7. Which term describes the molecule formed during transcription that carries the genetic code to the ribosome?

- A. Heredity
- B. Genetic screening
- C. mRNA**
- D. Alleles

The key idea is that messenger RNA is the carrier of the genetic code from DNA to the ribosome. During transcription, an RNA copy of a gene is made, and this molecule—mRNA—contains codons that specify the sequence of amino acids for a protein. It travels from the nucleus to the ribosome, where the information it carries is read to assemble the protein during translation. The other terms refer to broader concepts (heredity), tests (genetic screening), or gene variants (alleles), none of which describes the molecule that conveys the code to the ribosome. mRNA is the specific messenger that bridges DNA and protein synthesis.

8. Which process involves movement of molecules from low to high concentration and requires energy?

- A. Diffusion
- B. Osmosis
- C. Active transport**
- D. Filtration

Moving substances from a region of low concentration to a region of higher concentration requires energy and is carried out by proteins that pump molecules across the membrane. This is active transport. Cells use energy, typically from ATP, to drive these pumps, enabling them to accumulate minerals and nutrients when the gradient would otherwise oppose uptake—like ions being concentrated inside a cell or glucose being absorbed against its concentration gradient in the intestine. In contrast, diffusion and osmosis rely on the natural spread of particles from high to low concentration and do not require energy. Filtration involves pushing fluids through a membrane by pressure, rather than moving individual molecules uphill against their gradient.

9. Which process returns nitrogen to the atmosphere by converting nitrates into nitrogen gas?

- A. Nitrification
- B. Nitrogen fixation
- C. Ammonification
- D. Denitrification**

In the nitrogen cycle, returning fixed nitrogen to the atmosphere happens through denitrification. This process occurs in low-oxygen environments, like waterlogged soils or sediments, where certain bacteria use nitrate as the final electron acceptor in their respiration. They reduce nitrate (NO_3^-) step by step, ultimately producing nitrogen gas (N_2) that escapes into the air. This is what closes the loop by moving nitrogen back to the atmospheric reservoir. Other steps in the cycle—nitrogen fixation turning N_2 into usable forms like ammonia, nitrification converting ammonia to nitrate, and ammonification releasing ammonium from organic nitrogen—change the form of nitrogen but do not return it to the atmosphere.

10. What term describes a group of tissues carrying out a common function?

A. Symbiosis

B. Organ

C. Cytoplasm

D. Diffusion

Groups of tissues that work together to perform a specific function form an organ. This is the level of organization just above tissues in the body's structure: cells make tissues, tissues make organs, and organs can form part of organ systems. An organ is a distinct structure, like the heart, that contains several tissue types working in concert to achieve its role—pumping blood in this case. Symbiosis would describe a relationship between different organisms, not a structure inside an organism. Cytoplasm is the jelly-like material inside a cell, not a larger structure made from multiple tissues. Diffusion is the passive movement of particles from high to low concentration, a process, not a body part.

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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://leavingcertbiology.examzify.com>

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

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