

Honors Biology Final Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

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

SAMPLE

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

SAMPLE

- 1. Which inheritance pattern occurs when one allele is not completely dominant over another, resulting in an intermediate phenotype?**
 - A. Incomplete dominance**
 - B. Codominance**
 - C. Complete dominance**
 - D. Epistasis**

- 2. Which angiosperm type has one cotyledon?**
 - A. Monocot**
 - B. Dicot**
 - C. Gymnosperm**
 - D. Moss**

- 3. Which term refers to the DNA and protein complex that makes up chromosomes?**
 - A. Chromatin**
 - B. Chromosomes**
 - C. Genes**
 - D. Nucleolus**

- 4. Which term refers to a solution with a higher solute concentration than the cell interior?**
 - A. Hypertonic**
 - B. Hypotonic**
 - C. Isotonic**
 - D. Osmotic Pressure**

- 5. Which lipids assist in absorbing fat-soluble vitamins and are components of cell membranes, nerve cells, and certain hormones?**
 - A. Carbohydrates**
 - B. Fats**
 - C. Proteins**
 - D. Minerals**

- 6. What term describes inherited features that have lost all or most of their original function due to changed pressures?**
- A. Pedigree**
 - B. Vestigial Structures**
 - C. Homologous Structures**
 - D. Analogous Structures**
- 7. What term describes a fertilized egg?**
- A. Zygote**
 - B. Embryo**
 - C. Morula**
 - D. Gamete**
- 8. What are water channel proteins in cell membranes called?**
- A. Aquaporins**
 - B. Ion Channels**
 - C. Carrier Proteins**
 - D. Pumps**
- 9. Which transport process uses protein channels and does not require cellular energy?**
- A. Diffusion**
 - B. Facilitated Diffusion**
 - C. Osmosis**
 - D. Active Transport**
- 10. Which process is described as decoding an mRNA message into a protein?**
- A. Translation**
 - B. Transcription**
 - C. Replication**
 - D. Transformation**

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which inheritance pattern occurs when one allele is not completely dominant over another, resulting in an intermediate phenotype?

A. Incomplete dominance

B. Codominance

C. Complete dominance

D. Epistasis

When one allele is not completely dominant over another, the heterozygote shows an intermediate phenotype rather than a trait that looks like either parent. This blending occurs because the products of both alleles contribute to the trait in roughly equal, but not fully dominant, amounts. A classic example is flower color: red crossed with white can produce pink flowers, illustrating the intermediate phenotype. This differs from codominance, where both traits are expressed together and distinctly (you can see both red and white areas at the same time). It also differs from complete dominance, where the dominant allele completely masks the other in the phenotype, and from epistasis, where one gene at a different locus affecting the expression of another gene changes the outcome.

2. Which angiosperm type has one cotyledon?

A. Monocot

B. Dicot

C. Gymnosperm

D. Moss

Cotyledons are the seed leaves that provide nutrients to the developing embryo. In flowering plants, the number of cotyledons distinguishes major groups: monocots have one cotyledon, while dicots have two. Since the question asks for the angiosperm type with one cotyledon, the correct choice is monocots. Gymnosperms are seed plants but not angiosperms and have different seed structures, and mosses are non-vascular plants that don't produce seeds. So, one cotyledon points to monocots.

3. Which term refers to the DNA and protein complex that makes up chromosomes?

A. Chromatin

B. Chromosomes

C. Genes

D. Nucleolus

Chromatin is the material that chromosomes are made of. In the nucleus, DNA wraps around histone proteins to form nucleosomes, and those nucleosomes coil and fold into higher-order fibers. This DNA-protein complex is what constitutes chromosomes; during cell division, chromatin condenses further to become the visible chromosomes. Genes are specific sequences within DNA that code for proteins, not the packaging itself. The nucleolus is a region inside the nucleus where ribosomal RNA is produced, not the DNA-protein complex that forms chromosomes.

4. Which term refers to a solution with a higher solute concentration than the cell interior?

A. Hypertonic

B. Hypotonic

C. Isotonic

D. Osmotic Pressure

Tonicity describes how the solute concentration outside a cell compares to the inside and predicts the direction water moves by osmosis. When the external solution has a higher solute concentration than the cell interior, water leaves the cell to try to balance the concentrations, causing the cell to shrink. That environment is hypertonic. The other terms describe different relationships: hypotonic means the outside has a lower solute concentration, so water enters and the cell swells; isotonic means equal concentrations with no net water movement; osmotic pressure is the pressure produced by water moving across a membrane due to a solute gradient, not the label for the external solution's concentration.

5. Which lipids assist in absorbing fat-soluble vitamins and are components of cell membranes, nerve cells, and certain hormones?

A. Carbohydrates

B. Fats

C. Proteins

D. Minerals

Lipids are the molecules that do both nourishment and structure in the body. Fats, a major type of lipid, are involved in absorbing fat-soluble vitamins A, D, E, and K because these vitamins dissolve in fats and rely on dietary fats to form micelles with bile salts for transport to the intestinal lining. Beyond digestion, lipids form the backbone of cell membranes through phospholipids and cholesterol, which shape membrane structure and fluidity. They also make up myelin in nerve cells, insulate and protect neurons, and serve as precursors to steroid hormones derived from cholesterol. Because these roles—facilitating fat-soluble vitamin absorption, composing membranes, supporting nerve cell function, and yielding certain hormones—are all tied to fats, this choice best fits the description. Carbohydrates, proteins, and minerals don't perform these lipid-specific structural and transport roles.

6. What term describes inherited features that have lost all or most of their original function due to changed pressures?

- A. Pedigree**
- B. Vestigial Structures**
- C. Homologous Structures**
- D. Analogous Structures**

The main idea here is vestigial structures: inherited features that were functional in ancestors but have lost most or all of their original function because selective pressures changed. These remnants persist in anatomy or DNA even though they no longer provide a clear advantage, illustrating how evolution slows down or stops acting on features that are no longer useful. For example, the human coccyx is a reduced tailbone from our tailed ancestors, and whale pelvic bones derive from land-dwelling relatives. This concept is distinct from a pedigree, which is just a family tree; from homologous structures, which share ancestry and can have different functions; and from analogous structures, which look alike because of similar functions but not shared ancestry.

7. What term describes a fertilized egg?

- A. Zygote**
- B. Embryo**
- C. Morula**
- D. Gamete**

The fertilized egg is called a zygote. This single cell forms when a sperm fuses with an egg, restoring the diploid chromosome number and carrying genetic material from both parents. From there, the zygote undergoes rapid mitotic divisions (cleavage) and begins the journey of development toward becoming an embryo. The term embryo refers to the developing organism after fertilization as cell divisions and differentiation proceed. A morula is an earlier cleavage stage, a solid ball of cells formed before the hollow blastula stage. A gamete is the sperm or egg itself—the haploid reproductive cell that joins with its counterpart to form the zygote.

8. What are water channel proteins in cell membranes called?

- A. Aquaporins**
- B. Ion Channels**
- C. Carrier Proteins**
- D. Pumps**

Water moves across cell membranes most efficiently through specialized channel proteins that let water pass while excluding most solutes. These water-selective channels are called aquaporins. They form pores that allow rapid, facilitated diffusion of water in response to osmotic differences, which is crucial for maintaining cell turgor and body water balance in tissues like the kidney and plant roots. Other transport proteins have different roles: ion channels conduct charged ions, carrier proteins shuttle specific molecules by binding them and changing shape, and pumps use energy to move substances against their gradients. The key feature of aquaporins is their specific selectivity for water and their ability to move water quickly through the membrane.

9. Which transport process uses protein channels and does not require cellular energy?

A. Diffusion

B. Facilitated Diffusion

C. Osmosis

D. Active Transport

Moving substances across a membrane without using energy relies on down-the-gradient transport that happens through specific membrane proteins. Facilitated diffusion does exactly this: molecules that can't easily cross the lipid bilayer—often because they're large or charged—pass through channel or carrier proteins embedded in the membrane. The direction is from higher to lower concentration, so no cellular energy (ATP) is needed. This makes it the best match for a process described as using protein channels without energy input. Osmosis similarly is a passive, energy-free movement, but it's specifically the diffusion of water through channels called aquaporins, whereas the phrase focuses on solute movement via protein channels, which is the hallmark of facilitated diffusion. Active transport, in contrast, requires energy to move substances against their gradient.

10. Which process is described as decoding an mRNA message into a protein?

A. Translation

B. Transcription

C. Replication

D. Transformation

Translation decodes the information contained in an mRNA message to build a protein. The ribosome reads the mRNA codons three nucleotides at a time, and each codon specifies a particular amino acid. tRNA molecules bring the matching amino acids and pair their anticodons with the mRNA codons, delivering the correct building blocks in the right order. As amino acids are linked by peptide bonds, a polypeptide chain forms and then folds into a functional protein. This step uses the instructions in the mRNA to determine the protein sequence, while transcription creates the mRNA from DNA, replication copies DNA, and transformation refers to uptake of foreign DNA.

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://honorsbiologyfinal.examzify.com>

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

SAMPLE