

DOST SCIENCE PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://dostscience.examzify.com>



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. What term refers to the parents that reproduce together?**
 - A. Cross
 - B. Hybrid
 - C. Gene
 - D. Allele
- 2. Which gas, commonly produced by burning fossil fuels, is a major greenhouse gas?**
 - A. Oxygen
 - B. Carbon dioxide
 - C. Nitrogen
 - D. Hydrogen
- 3. The term that represents the concentration of hydrogen ions in a solution is?**
 - A. pH
 - B. Molarity
 - C. Alkalinity
 - D. pOH
- 4. What process do ribosomes perform by translating mRNA and using tRNA to assemble amino acids into a polypeptide?**
 - A. Transcription
 - B. Translation
 - C. Replication
 - D. Mutation
- 5. Which molecules strengthen the cell membrane?**
 - A. Proteins in membrane
 - B. Carbohydrates
 - C. Cholesterol molecules
 - D. Nucleic acids

- 6. Which process breaks rocks by physical forces such as freezing and cracking without changing their chemical composition?**
- A. Chemical weathering
 - B. Physical weathering
 - C. Biological weathering
 - D. Erosion
- 7. Which RNA type is primarily a structural and catalytic component of ribosomes?**
- A. rRNA (ribosomal RNA)
 - B. tRNA (transfer RNA)
 - C. ncRNA (non-coding RNA)
 - D. mRNA (messenger RNA)
- 8. Isotonic solution describes equal concentrations outside and inside cell.**
- A. Hypertonic Solution
 - B. Isotonic Solution
 - C. Hypotonic Solution
 - D. Endocytosis
- 9. The heat imparted to a planetary body by the processes of its formation is called what?**
- A. Residual heat
 - B. Primordia heat
 - C. Gravitational heat
 - D. Radiogenic heat
- 10. Which boundary is associated with subduction and is destructive?**
- A. Transform boundary
 - B. Divergent boundary
 - C. Ridge boundary
 - D. Convergent boundary

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What term refers to the parents that reproduce together?

- A. Cross**
- B. Hybrid
- C. Gene
- D. Allele

In genetics, the term used for the two organisms that reproduce together is cross. This word captures the idea of mating or breeding two individuals to study how traits are inherited, and it's the pairing that starts the genetic cross. The parents in such a pairing contribute their alleles to the offspring, which is why the pair is described as the cross and the act of crossing. The other terms refer to different things: a hybrid is typically the offspring that results from crossing two different varieties, not the parents themselves; a gene is the basic unit of heredity; an allele is a variant form of a gene. So the best fit for the description "parents that reproduce together" is cross.

2. Which gas, commonly produced by burning fossil fuels, is a major greenhouse gas?

- A. Oxygen
- B. Carbon dioxide**
- C. Nitrogen
- D. Hydrogen

Greenhouse gases trap heat in the atmosphere. When fossil fuels burn, the carbon in the fuel combines with oxygen to form carbon dioxide. This gas is a major greenhouse gas because it efficiently absorbs infrared radiation emitted by Earth's surface and re-radiates it back downward, warming the lower atmosphere and surface. Even though some gases are more potent heat absorbers per molecule, carbon dioxide is released in much larger amounts from burning fuels, making it the dominant greenhouse gas from this process. The other options do not act as significant greenhouse gases in this context: oxygen and nitrogen are the main air components and don't trap heat like CO₂, and hydrogen isn't present in the atmosphere in a form that contributes notably to the greenhouse effect.

3. The term that represents the concentration of hydrogen ions in a solution is?

- A. pH**
- B. Molarity
- C. Alkalinity
- D. pOH

Hydrogen ion concentration determines how acidic a solution is, and the term that expresses this is pH. It is defined as $pH = -\log_{10}[H^+]$, so it directly reflects the amount of hydrogen ions present. A low pH means a high hydrogen ion concentration, while a high pH means a lower hydrogen ion concentration. The other terms don't describe hydrogen ion concentration specifically: molarity is a general measure of solute per liter, alkalinity is the capacity to neutralize acids, and pOH gauges hydroxide ion concentration (with pH and pOH adding to about 14 at room temperature).

4. What process do ribosomes perform by translating mRNA and using tRNA to assemble amino acids into a polypeptide?

- A. Transcription**
- B. Translation
- C. Replication
- D. Mutation

Translation is the process being described. Here, ribosomes read the message carried by mRNA and use transfer RNA to bring in the correct amino acids. Each tRNA matches a codon on the mRNA with its anticodon, ensuring the amino acids are added in the right order. The ribosome then links these amino acids together with peptide bonds, forming a growing polypeptide chain that becomes a protein after folding. Transcription, by contrast, is the copying of DNA into messenger RNA and is not carried out by ribosomes. Replication copies DNA itself, and mutation refers to a change in the DNA sequence.

5. Which molecules strengthen the cell membrane?

- A. Proteins in membrane
- B. Carbohydrates**
- C. Cholesterol molecules
- D. Nucleic acids

Cholesterol molecules embedded in the phospholipid bilayer regulate membrane fluidity and stability. By inserting between the fatty acid tails, they prevent the membrane from becoming too fluid at higher temperatures and from becoming too rigid at lower temperatures, which helps maintain integrity and controls permeability to small molecules. Carbohydrates on the membrane surface mainly serve roles in cell recognition and signaling rather than strengthening the bilayer. Nucleic acids are not components of the membrane, and while membrane proteins contribute to structure and function, they don't primarily stiffen the bilayer. Therefore, cholesterol strengthens the cell membrane.

6. Which process breaks rocks by physical forces such as freezing and cracking without changing their chemical composition?

- A. Chemical weathering
- B. Physical weathering**
- C. Biological weathering
- D. Erosion

Physical weathering is the breakdown of rocks by mechanical forces that do not alter the minerals themselves. For example, when water enters cracks and freezes, it expands and pries the rock apart; repeated freeze-thaw cycles gradually widen those cracks and split pieces off. Other forms include frost wedging, pressure release causing layers to peel, abrasion by wind or water, and roots expanding cracks. The key point is that the mineral composition remains unchanged, just the rock is broken into smaller pieces. This contrasts with chemical weathering, where minerals react with water, acids, or gases and new substances are formed. Erosion is the transport of those weathered pieces away, not the act of breaking them. So the process described is physical weathering.

7. Which RNA type is primarily a structural and catalytic component of ribosomes?

- A. rRNA (ribosomal RNA)**
- B. tRNA (transfer RNA)
- C. ncRNA (non-coding RNA)
- D. mRNA (messenger RNA)

Ribosomal RNA forms the essential scaffold of the ribosome and carries out the chemical reaction that links amino acids during protein synthesis. The active site that catalyzes peptide bond formation is provided by the rRNA itself, making the ribosome a ribozyme. While ribosomal proteins help stabilize the structure and support function, the catalytic power comes from the RNA component. Transfer RNA, on the other hand, delivers specific amino acids to the growing chain; messenger RNA carries the code that specifies the sequence of amino acids; non-coding RNAs include various regulatory roles but are not the primary catalytic component of the ribosome. Therefore, the RNA type that is both structural and catalytic in ribosomes is the ribosomal RNA.

8. Isotonic solution describes equal concentrations outside and inside cell.

- A. Hypertonic Solution
- B. Isotonic Solution**
- C. Hypotonic Solution
- D. Endocytosis

Water moves across cell membranes by osmosis to balance solute levels. When the outside solution has the same solute concentration as the inside of the cell, there is no net water movement, so the cell's volume and shape stay stable. This state is what we call isotonic. If the outside solution is more concentrated (hypertonic), water leaves the cell and it shrinks. If it is less concentrated (hypotonic), water enters and the cell swells or may burst. Endocytosis is a process of taking in large particles by engulfing them, not about balancing solute concentrations. So equal outside and inside concentrations describe the isotonic condition.

9. The heat imparted to a planetary body by the processes of its formation is called what?

- A. Residual heat
- B. Primordia heat**
- C. Gravitational heat
- D. Radiogenic heat

Primordial heat is the heat a planet inherits during its formation from the energy released as material accretes. When planetesimals collide, their kinetic energy is transformed into heat. Additionally, as matter falls into the growing body's gravity, gravitational potential energy is released and also heats the interior. This combination creates a hot, partially molten interior early on and influences differentiation and volcanic activity. This distinguishes it from radiogenic heat, which comes from radioactive decay that occurs after formation, and from more generic terms like residual heat, which describe heat remaining after cooling rather than the heat generated during the formation process.

10. Which boundary is associated with subduction and is destructive?

- A. Transform boundary
- B. Divergent boundary
- C. Ridge boundary
- D. Convergent boundary**

Subduction happens at convergent plate boundaries, where two plates push toward each other and the denser plate sinks beneath the lighter one into the mantle. This recycles crust, so it's considered a destructive boundary. The sinking of crust in these zones creates features like deep ocean trenches, volcanic arcs, and strong earthquakes—classic signs of subduction, such as those around the Pacific Ring of Fire. So the boundary in question is the convergent boundary. Transform boundaries involve sliding past one another with little to no crust destruction, and divergent boundaries move apart, creating new crust rather than recycling it. The term ridge is typically linked to divergent boundaries rather than subduction.

SAMPLE

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://dostscience.examzify.com>

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

SAMPLE