

Ecology Regents 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	16

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

- 1. What role do food webs play in an ecosystem affected by climate change?**
 - A. They remain unaffected by climate variability**
 - B. They can become disrupted**
 - C. They simplify the energy flow**
 - D. They eliminate species competition**
- 2. What is a significant ecological function of coral reefs?**
 - A. Reduction of ocean temperature**
 - B. Habitat for diverse marine species**
 - C. Absorption of carbon dioxide**
 - D. Filtration of pollutants**
- 3. What would likely happen to the ant population if grasses were removed from their ecosystem?**
 - A. Increase because there are fewer predators**
 - B. Decrease due to lack of food**
 - C. Remain stable since ants do not rely on grasses**
 - D. Increase due to fewer competitors**
- 4. How have humans contributed to changes in atmospheric CO₂ levels?**
 - A. By burning fossil fuels**
 - B. Through increased industrialization**
 - C. By practicing deforestation**
 - D. Through heavy reliance on vehicles**
- 5. Which factor is often affected by climate change in ecosystems?**
 - A. Soil composition**
 - B. Species migration patterns**
 - C. Sunlight availability**
 - D. Air pollution levels**

- 6. What is the role of apex predators in an ecosystem?**
- A. To increase biodiversity**
 - B. To control populations of other species**
 - C. To decompose organic matter**
 - D. To facilitate energy transfer to lower trophic levels**
- 7. In an experiment testing temperature effects on daphnia population size, what is the independent variable?**
- A. The number of daphnia**
 - B. The control group's temperature**
 - C. The temperature of the water**
 - D. The type of daphnia used**
- 8. What is the term for a group of organisms of the same species living in the same area?**
- A. Community**
 - B. Population**
 - C. Ecosystem**
 - D. Biome**
- 9. What defines a trophic level in an ecosystem?**
- A. The number of species in an area**
 - B. The role of an organism in energy transfer**
 - C. The size of an organism's habitat**
 - D. The genetic diversity of a species**
- 10. Which statement best describes heterotrophs?**
- A. They produce energy through photosynthesis**
 - B. They generate energy from chemical reactions**
 - C. They depend on other organisms for nutrition**
 - D. They recycle nutrients into the ecosystem**

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What role do food webs play in an ecosystem affected by climate change?

- A. They remain unaffected by climate variability**
- B. They can become disrupted**
- C. They simplify the energy flow**
- D. They eliminate species competition**

Food webs play a crucial role in maintaining ecosystem balance, and they can become significantly disrupted in the context of climate change. Climate change affects temperature, precipitation patterns, and seasonal cycles, which in turn influence the availability of resources, species interactions, and overall biodiversity. As certain species may struggle to adapt to rapidly changing conditions, or their migratory patterns may be altered, the interconnected relationships within food webs can be thrown off balance. Predators may find it harder to catch prey that are shifting to new habitats, while prey species might face increased competition or changes in their food sources. When one species in a food web is affected, it can have cascading effects on others, leading to a potential decline in some populations and an increase in others. This disruption can result in altered energy flow within the ecosystem, affecting nutrient cycling and leading to mismatches between species that rely on each other for survival and reproduction. The complexities of these interdependencies demonstrate that food webs are sensitive to shifts in environmental conditions, making them vulnerable to the impacts of climate change.

2. What is a significant ecological function of coral reefs?

- A. Reduction of ocean temperature**
- B. Habitat for diverse marine species**
- C. Absorption of carbon dioxide**
- D. Filtration of pollutants**

Coral reefs play a crucial role in providing habitat for a diverse array of marine species. They serve as important ecosystems that support thousands of organisms, including fish, invertebrates, and various other marine life forms. The complex structure of coral reefs creates various niches and shelters where numerous species can live, reproduce, and find food. The biodiversity supported by coral reefs contributes significantly to the overall health of ocean ecosystems. Many fish species, which are vital for both the marine food web and human fishing industries, rely on coral reefs for their survival. This habitat also plays a role in protecting coastal areas from erosion and storm damage by buffering wave energy. While coral reefs do absorb some carbon dioxide, their primary ecological function is fundamentally centered around providing habitat and facilitating interactions among various marine species. This makes them essential for maintaining the balance and productivity of marine ecosystems. Other processes, like filtration of pollutants and regulation of ocean temperature, may occur but are not as central to the role of coral reefs as supporting biodiversity.

3. What would likely happen to the ant population if grasses were removed from their ecosystem?

- A. Increase because there are fewer predators**
- B. Decrease due to lack of food**
- C. Remain stable since ants do not rely on grasses**
- D. Increase due to fewer competitors**

The ant population would likely decrease due to the lack of food resources when grasses are removed from their ecosystem. Many ant species are scavengers or herbivores, and they rely on a variety of plant materials, including grasses, for sustenance. Grasses often provide not only food but also habitat and protection for various insects that ants may prey upon or scavenge from. Without this crucial food source, ants would struggle to find adequate nutrition, leading to a decline in their population. The other factors presented in the options do not accurately reflect the ecological role of grasses in supporting ant populations. For instance, a reduction in predators could potentially support an increase in population, but since grass removal directly impacts food availability, this would not be a primary factor. Similarly, while ants may not rely solely on grasses, they do depend on a variety of local food sources, and lack of grasses would likely destabilize their food web. The notion of fewer competitors would not apply as directly because the immediate impact of removing a vital food source would be more significant than any potential advantage gained from decreased competition.

4. How have humans contributed to changes in atmospheric CO₂ levels?

- A. By burning fossil fuels**
- B. Through increased industrialization**
- C. By practicing deforestation**
- D. Through heavy reliance on vehicles**

Humans have significantly contributed to changes in atmospheric CO₂ levels primarily through the burning of fossil fuels. When fossil fuels such as coal, oil, and natural gas are burned for energy, they release carbon dioxide into the atmosphere as a byproduct of combustion. This process has dramatically increased the concentration of CO₂ in the atmosphere, especially since the Industrial Revolution, leading to climate change and global warming. While the other factors are also important contributors to increased CO₂ levels, burning fossil fuels is a direct and major source of emissions. The combustion process alone accounts for a substantial portion of human-caused CO₂ emissions. This action not only raises CO₂ levels but also affects other greenhouse gases, compounding the issue of climate change.

5. Which factor is often affected by climate change in ecosystems?

- A. Soil composition**
- B. Species migration patterns**
- C. Sunlight availability**
- D. Air pollution levels**

Species migration patterns are significantly influenced by climate change because alterations in temperature and weather conditions directly affect the habitats and resources that species rely on. As climates shift, many organisms may find their current habitats unsuitable for survival due to changes in temperature, precipitation patterns, and the availability of food resources. For instance, as temperatures rise, certain species may migrate toward cooler areas, such as higher altitudes or latitudes, in search of suitable living conditions. This can lead to changes in community structures, as some species may thrive while others, unable to relocate, face population declines or extinction. Additionally, migration patterns can affect ecosystems on a broader scale; for example, changes in the migration of pollinators like bees can impact plant reproduction, while shifts in the ranges of predators may alter prey dynamics. These interactions illustrate how interconnected and sensitive ecosystems are to climatic changes.

6. What is the role of apex predators in an ecosystem?

- A. To increase biodiversity**
- B. To control populations of other species**
- C. To decompose organic matter**
- D. To facilitate energy transfer to lower trophic levels**

Apex predators play a crucial role in controlling the populations of other species within an ecosystem. By preying on herbivores and smaller carnivores, they help to maintain the balance of food webs and contribute to the regulation of biodiversity. This population control prevents any one species from becoming overly dominant, which could lead to overgrazing or overpopulation issues that can degrade the habitat and reduce overall biodiversity. In addition to their direct impact on prey populations, apex predators can influence the behavior and distribution of other species, a concept known as "trophic cascades." When apex predators are present, they not only hunt but also enforce a natural order among species, allowing for a more balanced and diverse ecosystem. Their presence can enhance the stability of the ecosystem by allowing various plant and animal species to thrive. The other options do touch on various ecological processes, but they do not encapsulate the primary function of apex predators as effectively. Increasing biodiversity, decomposing organic matter, and facilitating energy transfer are important ecological roles, but they are not the main contributions of apex predators in a functional ecosystem. Instead, their primary contribution lies in population control, which supports overall ecosystem health and resilience.

7. In an experiment testing temperature effects on daphnia population size, what is the independent variable?

- A. The number of daphnia**
- B. The control group's temperature**
- C. The temperature of the water**
- D. The type of daphnia used**

In an experiment, the independent variable is the factor that is deliberately manipulated to observe its effect on another variable, known as the dependent variable. In this case, the independent variable is the temperature of the water. By changing the temperature and observing how it affects the daphnia population size, researchers can draw conclusions about the relationship between water temperature and daphnia growth or survival. This manipulation allows the experiment to yield results that indicate how temperature influences daphnia populations. The number of daphnia reflects the outcome of the experiment and is therefore considered the dependent variable, while the control group's temperature is not relevant to the manipulation of the experiment. The type of daphnia used can also be controlled, but it isn't the focus of the experiment concerning temperature's effects. Therefore, the temperature of the water is indeed the independent variable, as it is being tested for its influence on the daphnia population.

8. What is the term for a group of organisms of the same species living in the same area?

- A. Community**
- B. Population**
- C. Ecosystem**
- D. Biome**

The correct term for a group of organisms of the same species living in the same area is "population." In ecology, a population specifically refers to all individuals of a particular species that share a common habitat and are capable of interbreeding. This concept is crucial for studying how species interact with their environment, how they grow and decline over time, and how they respond to ecological pressures such as predation, competition, and environmental changes. In contrast, a community refers to different populations of various species that live together in a specific area, while an ecosystem encompasses both the living (biotic) and non-living (abiotic) components interacting in a particular environment. A biome is a much larger ecological classification based on climate, vegetation, and animal life, such as tropical rainforests or deserts. Understanding these terms helps clarify the hierarchy of ecological organization and the relationships between species and their environments.

9. What defines a trophic level in an ecosystem?

- A. The number of species in an area
- B. The role of an organism in energy transfer**
- C. The size of an organism's habitat
- D. The genetic diversity of a species

A trophic level in an ecosystem is defined by the role of an organism in energy transfer within that ecosystem. This concept organizes organisms into different levels based on their feeding relationships and energy roles. For instance, producers, such as plants, occupy the first trophic level as they convert solar energy into chemical energy through photosynthesis. Herbivores that consume these plants form the second trophic level, while carnivores that eat those herbivores are positioned in the third level and so on. Each level illustrates how energy moves through the ecosystem, illustrating the interconnected relationships between different organisms as they obtain and transfer energy. This focus on energy transfer is crucial for understanding the dynamics of ecosystems and how various organisms interact within their food webs.

10. Which statement best describes heterotrophs?

- A. They produce energy through photosynthesis
- B. They generate energy from chemical reactions
- C. They depend on other organisms for nutrition**
- D. They recycle nutrients into the ecosystem

Heterotrophs are organisms that cannot synthesize their own food and therefore rely on other organisms for their nutritional needs. This characteristic is fundamental to their role in ecosystems, as they consume various forms of organic matter—such as plants, animals, and decomposed materials—to obtain the energy and nutrients necessary for survival. This dependency on other organisms distinguishes heterotrophs from autotrophs, which can produce their own energy through processes like photosynthesis or chemosynthesis. Additionally, while some heterotrophs may play a role in recycling nutrients, this is not a defining characteristic—they do contribute to nutrient cycling as they decompose organic material, but the essence of being a heterotroph lies in their need to consume other organisms for nutrition. Thus, the statement correctly identifies the core characteristic of heterotrophs.

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://ecologyregents.examzify.com>

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