

NCEA LEVEL 3 BIOLOGY – PLANT AND ANIMAL RESPONSES (AS91602) PRACTICE EXAM (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	16

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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. Which of the following describes directional growth towards or away from a stimulus?**
 - A. Nastic movements
 - B. Phototropism
 - C. Tropism
 - D. Kinesis
- 2. What term describes a hierarchical structure based on dominance in animal behavior?**
 - A. Courtship behavior
 - B. Pecking order
 - C. Diurnal pattern
 - D. Arrhythmic response
- 3. What is the effect of negative feedback mechanisms in homeostasis?**
 - A. They initiate physiological changes that amplify disturbances
 - B. They stabilize physiological systems by reversing changes
 - C. They maintain constant changes regardless of internal conditions
 - D. They enhance the response to external stimuli
- 4. In terms of biotic interactions, what does amensalism specifically refer to?**
 - A. Both organisms benefit
 - B. One organism benefits while the other is harmed
 - C. One organism is unaffected while the other is harmed
 - D. Both organisms are harmed
- 5. Which of the following terms refers specifically to navigation using the stars?**
 - A. Astrometric navigation
 - B. Astralogical navigation
 - C. Stellar navigation
 - D. Solar navigation

- 6. What type of movement is characterized by speed being related to the intensity of a stimulus?**
- A. Klinokinesis
 - B. Orthokinesis
 - C. Positive chemotaxis
 - D. Learning
- 7. What describes a free-running rhythm in biological terms?**
- A. A rhythm regulated solely by environmental cues
 - B. A cyclical activity driven by an internal biological clock
 - C. A fixed schedule governed by seasonal changes
 - D. A pattern affected by external light sources
- 8. What is the mass movement of a population from one area to another called?**
- A. Migration
 - B. Dispersion
 - C. Foraging
 - D. Translocation
- 9. What term is used to describe non-directional responses to a stimulus, often found in plants?**
- A. Nastic movements
 - B. Tropism
 - C. Kinesis
 - D. Thigmotropism
- 10. How do innate immune responses protect animals from pathogens?**
- A. They involve learned behaviors from previous infections
 - B. They create a physical barrier and activate immediate immune responses
 - C. They solely rely on antibodies produced by B-cells
 - D. They are specific to each type of pathogen

Answers

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

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Explanations

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1. Which of the following describes directional growth towards or away from a stimulus?

- A. Nastic movements
- B. Phototropism
- C. Tropism**
- D. Kinesis

Directional growth towards or away from a stimulus is best described by tropism. Tropism refers specifically to a plant's growth response that is directed by the direction of a stimulus. For example, phototropism is when plants grow towards light, while gravitropism involves growth in response to gravity. The fundamental characteristic of tropism is that it involves growth in a specific direction as a response to an environmental stimulus. Other options do represent types of movements or responses to stimuli, but they do not capture the essence of directional growth as specifically as tropism. Nastic movements are non-directional responses that occur regardless of the stimulus direction, while kinesis refers to a movement in response to a stimulus that does not involve orientation, as it might speed up or slow down movement without growing towards or away from the stimulus. Phototropism is indeed a type of tropism but does not encompass the broader definition of directional growth in response to any type of stimulus.

2. What term describes a hierarchical structure based on dominance in animal behavior?

- A. Courtship behavior
- B. Pecking order**
- C. Diurnal pattern
- D. Arrhythmic response

The term that describes a hierarchical structure based on dominance in animal behavior is "pecking order." This concept refers to the social hierarchy that is established among a group of animals, particularly within species where individuals establish dominance and subordination relationships. In this hierarchy, dominant individuals have preferential access to resources such as food, mates, and territory. Understanding pecking order is crucial because it influences various aspects of social interactions, reproductive success, and survival strategies within a species. Animals often exhibit specific behaviors to assert their rank or to avoid confrontation, solidifying their place within the hierarchy. The other options deal with different aspects of animal behavior. Courtship behavior pertains to activities performed by animals to attract mates, which is not directly related to social hierarchy. Diurnal patterns refer to the behavioral activities of animals that occur during the day, while arrhythmic responses relate to behaviors that do not follow predictable patterns, neither of which reflects a dominance structure among individuals.

3. What is the effect of negative feedback mechanisms in homeostasis?

- A. They initiate physiological changes that amplify disturbances
- B. They stabilize physiological systems by reversing changes**
- C. They maintain constant changes regardless of internal conditions
- D. They enhance the response to external stimuli

Negative feedback mechanisms play a crucial role in maintaining homeostasis by stabilizing physiological systems. When there is a deviation from a set point or normal range within the body, negative feedback triggers physiological responses that act to reverse that change. For example, if body temperature rises above the normal range, mechanisms such as sweating and dilation of blood vessels are activated to cool the body down, bringing the temperature back to its set point. This process is vital for ensuring that internal conditions remain within a narrow range suitable for optimal functioning, thereby promoting overall health and stability in an organism. In contrast, options that indicate amplification of disturbances or maintaining constant changes without regard to internal conditions do not reflect the stabilizing nature of negative feedback. Similarly, enhancing responses to external stimuli does not align with homeostatic regulation, which focuses on correcting deviations from a set point rather than amplifying them.

4. In terms of biotic interactions, what does amensalism specifically refer to?

- A. Both organisms benefit
- B. One organism benefits while the other is harmed
- C. One organism is unaffected while the other is harmed**
- D. Both organisms are harmed

Amensalism specifically refers to a relationship between two organisms where one is unaffected and the other is harmed. In this interaction, one species may produce substances that are detrimental to another species without necessarily benefiting itself. A classic example of amensalism is when a large tree shades smaller plants, limiting their access to sunlight and thus harming them, while the tree itself remains unaffected by the presence of these smaller plants. This relationship highlights the complexities of ecological interactions, showing that not all biological relationships are mutually beneficial or detrimental.

5. Which of the following terms refers specifically to navigation using the stars?

- A. Astrometric navigation
- B. Astral navigation
- C. Stellar navigation**
- D. Solar navigation

The term that refers specifically to navigation using the stars is known as stellar navigation. This method relies on identifying and using the positions of stars to determine one's location and direction while traveling, especially at sea or in the air. Sailors and aviators traditionally use this technique, often employing tools like sextants to measure angles between stars and the horizon. Stellar navigation is distinguished from other navigation forms, such as solar navigation, which involves the sun's position, or astrometric navigation, which may encompass a broader range of celestial bodies beyond just stars. Astral navigation, while similar sounding, typically refers more to the use of celestial bodies in navigation but does not narrowly focus on stars alone. Thus, stellar navigation is the most precise term when specifically discussing navigation using stars.

6. What type of movement is characterized by speed being related to the intensity of a stimulus?

- A. Klinokinesis
- B. Orthokinesis**
- C. Positive chemotaxis
- D. Learning

The type of movement characterized by speed being related to the intensity of a stimulus is known as orthokinesis. In this type of movement, organisms change their rate of movement in response to environmental stimuli. Specifically, the faster the stimulus is perceived to be, the quicker the organism will move. This relationship allows the organism to effectively navigate towards favorable conditions or away from harmful ones. For instance, in response to changes in light or temperature, an organism may exhibit increased movement speed when these factors become more intense, thereby helping it find optimal habitats or resources. This mechanism is important for survival, as it equips organisms with a simple but effective way to respond to varying environmental conditions. In contrast, other types of movement such as klinokinesis refer to changes in the rate of turning rather than linear speed, while positive chemotaxis involves movement towards a chemical gradient rather than a direct response to speed. Learning, though important in behavior, does not relate to immediate stimulus-response movements in the same manner as orthokinesis.

7. What describes a free-running rhythm in biological terms?

- A. A rhythm regulated solely by environmental cues
- B. A cyclical activity driven by an internal biological clock**
- C. A fixed schedule governed by seasonal changes
- D. A pattern affected by external light sources

A free-running rhythm refers to a biological rhythm that is generated and maintained by an internal biological clock, independent of external environmental cues. This rhythm typically oscillates with a period slightly longer or shorter than 24 hours, suggesting that while it is influenced by the body's intrinsic timing mechanisms, it is not directly synchronized with external factors like light or temperature. The internal biological clock, often referred to as circadian rhythms, enables organisms to anticipate and adapt to cycles of day and night or other consistent environmental changes without relying on direct sensory input from the environment. This means that even in constant conditions where external cues are absent, such as in controlled laboratory settings, the free-running rhythm persists, highlighting the autonomy of the biological clock. In contrast to a free-running rhythm, rhythms that are highly influenced by environmental cues or fixed schedules do not capture the essence of an internal biological clock's independence, which is the defining feature of a free-running rhythm.

8. What is the mass movement of a population from one area to another called?

A. Migration

B. Dispersion

C. Foraging

D. Translocation

The mass movement of a population from one area to another is referred to as migration. This term specifically describes the seasonal or periodic movement of animals from one habitat to another, often in search of food, mating opportunities, or suitable environmental conditions. Migration is a key behavior observed in many species and is influenced by factors such as climate, availability of resources, and reproductive cycles. In contrast, dispersion refers more to the spreading out of individuals within a population in a given area rather than a mass movement from one area to another. Foraging pertains to the behavior associated with searching for and exploiting food resources, while translocation generally describes the purposeful movement of organisms from one location to another, often for conservation purposes. Therefore, "migration" accurately captures the essence of a population's mass movement across distances between different regions.

9. What term is used to describe non-directional responses to a stimulus, often found in plants?

A. Nastic movements

B. Tropism

C. Kinesis

D. Thigmotropism

Nastic movements describe non-directional responses in plants that occur independently of the direction of the stimulus. This means the responses happen in a fixed, predictable manner, regardless of where the stimulus is coming from. An example of this would be the opening and closing of flowers or the folding of leaves in response to touch or changes in light. The key feature of nastic movements is their lack of directional growth toward or away from the stimulus, which distinguishes them from tropic movements, which are directional in response to environmental signals. In contrast, tropism refers to growth responses where plants move toward or away from a directional stimulus, such as light or gravity. Kinesis is a type of movement in response to stimuli, but it is not specific to plants and does involve a change in activity rather than a growth response. Thigmotropism is a specific type of tropism involving growth in response to touch, showing directional behavior towards contact. Therefore, the term that accurately captures the essence of non-directional responses in plants is nastic movements.

10. How do innate immune responses protect animals from pathogens?

- A. They involve learned behaviors from previous infections
- B. They create a physical barrier and activate immediate immune responses**
- C. They solely rely on antibodies produced by B-cells
- D. They are specific to each type of pathogen

The innate immune responses serve as the body's first line of defense against pathogens by creating both physical and chemical barriers and triggering immediate immune mechanisms. This includes physical barriers like skin and mucous membranes that prevent pathogens from entering the body. In addition, innate immunity activates various immune cells such as phagocytes and natural killer cells, which respond quickly to any invading pathogens. These responses are nonspecific, meaning they work against a wide range of potential threats without prior exposure, thus providing rapid protection. This immediate reaction is crucial in containing infections and preventing them from spreading. In contrast to the other options, there is no component of learned behavior in the innate immune response, as that is characteristic of the adaptive immune response. Antibody production by B-cells is part of adaptive immunity and not the innate response, which does not rely on antibodies. Furthermore, innate responses are not specific to each pathogen; rather, they provide a generalized defense mechanism against all kinds of pathogens.

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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:

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

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