

IGCSE BIOLOGY – COORDINATION AND RESPONSE PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. What best describes the difference between hormones and nerve impulses?

- A. Hormones are electrical signals carried along neurons.
- B. Nerves use slow chemical signals through the bloodstream.
- C. Hormones are chemical signals carried in blood, acting slowly on many organs.
- D. Nerve impulses travel in hormones to target organs.

2. Which type of neuron carries signals from sensory receptors to the CNS?

- A. Interneuron
- B. Relay neurone
- C. Motor neurone
- D. Sensory neurone

3. What is homeostasis? Give an example involving temperature.

- A. A condition where body temperature is always rising.
- B. Maintenance of a stable internal environment; e.g., body temperature kept around 37 C by sweating/shivering and vasomotor changes.
- C. A temporary change in the internal environment.
- D. The body's response to external stimuli only.

4. Which part of a neuron carries impulses away from the cell body?

- A. Dendrite
- B. Nucleus
- C. Axon
- D. Myelin sheath

5. Which statement about the pancreas is correct?

- A. The pancreas releases insulin, which lowers blood glucose.
- B. The pancreas releases adrenaline during stress.
- C. The pancreas releases glucagon to decrease blood glucose.
- D. The pancreas releases growth hormone to promote growth.

- 6. In phototropism, which side accumulates auxin?**
- A. Shaded side
 - B. Illuminated side
 - C. Both sides equally
 - D. No auxin movement
- 7. A special structure that allows living organisms to sense the conditions of their internal or external environment.**
- A. Stimulus
 - B. Neuron
 - C. Effector
 - D. Receptor
- 8. Which structure controls pupil diameter in response to light?**
- A. The retina
 - B. The cornea
 - C. The iris
 - D. The sclera
- 9. Which part carries impulses toward the cell body?**
- A. Axon
 - B. Nucleus
 - C. Synapse
 - D. Dendrite
- 10. What is the function of the cochlea in the ear?**
- A. Converts sound vibrations into electrical impulses via hair cells; contributes to hearing.
 - B. Amplifies sound using the ossicles.
 - C. Detects balance through semicircular canals.
 - D. Filters sound waves before they reach the inner ear.

Answers

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

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Explanations

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1. What best describes the difference between hormones and nerve impulses?

- A. Hormones are electrical signals carried along neurons.
- B. Nerves use slow chemical signals through the bloodstream.
- C. Hormones are chemical signals carried in blood, acting slowly on many organs.**
- D. Nerve impulses travel in hormones to target organs.

The difference being tested is how signaling in the body occurs through hormones versus nerve impulses. Hormones are chemical signals released into the bloodstream by glands, so they travel around the body and can affect many organs. Because they rely on circulation and receptor interactions, their effects start more slowly and tend to last longer. In contrast, nerve impulses are electrical signals that travel along neurons, giving rapid, precise responses to a specific target. They don't spread through the blood to many organs and are typically short-lived. So the best description is that hormones are chemical signals carried in blood, acting slowly on many organs. Electrical nerve impulses move quickly along nerves to targeted tissues, not through the bloodstream.

2. Which type of neuron carries signals from sensory receptors to the CNS?

- A. Interneuron
- B. Relay neurone
- C. Motor neurone
- D. Sensory neurone**

Signals from a stimulus are detected by sensory receptors and converted into nerve impulses that travel along a sensory neurone toward the CNS. This neurone is specialized to carry information from the periphery to the brain or spinal cord, making it the sensory neurone. Inside the CNS, these impulses may be relayed by interneurons (relay neurones) to other neurons, such as motor neurones that carry impulses from the CNS to effectors like muscles. So the type of neuron that carries signals from sensory receptors to the CNS is the sensory neurone.

3. What is homeostasis? Give an example involving temperature.

- A. A condition where body temperature is always rising.
- B. Maintenance of a stable internal environment; e.g., body temperature kept around 37°C by sweating/shivering and vasomotor changes.**
- C. A temporary change in the internal environment.
- D. The body's response to external stimuli only.

Homeostasis is about keeping the body's internal conditions steady even as the outside environment changes. For temperature, the body tries to stay around 37°C. When it gets too hot, cooling mechanisms kick in—sweating and vasodilation (blood vessels near the skin widen) to lose heat. When it's too cold, warming responses occur—shivering and vasoconstriction (blood vessels narrow) to conserve heat. This regulation relies on negative feedback, where a deviation from the set point triggers responses that push the value back toward normal. The other ideas don't fit because homeostasis isn't about a constant rise in temperature, nor is it just a temporary change. It's about maintaining a stable internal state, and it involves responses to both internal and external changes, not only external stimuli.

4. Which part of a neuron carries impulses away from the cell body?

- A. Dendrite
- B. Nucleus
- C. Axon
- D. Myelin sheath

This question is about the direction in which nerve impulses travel inside a neuron. The part that carries impulses away from the cell body is the axon. Dendrites receive signals and bring them toward the cell body, so they don't send impulses away. The nucleus sits in the cell body and contains the cell's genetic material, not the transmission pathway. The myelin sheath insulates the axon and speeds up signal transmission, but it doesn't determine the direction. When a neuron fires, the impulse starts near the cell body and travels along the axon to reach the synapse with another neuron or an effector cell.

5. Which statement about the pancreas is correct?

- A. The pancreas releases insulin, which lowers blood glucose.
- B. The pancreas releases adrenaline during stress.
- C. The pancreas releases glucagon to decrease blood glucose.
- D. The pancreas releases growth hormone to promote growth.

Pancreatic control of blood sugar relies on hormones that lower or raise glucose levels. After eating, insulin is released from the pancreas (by beta cells). Insulin helps body cells take up glucose from the blood and signals the liver to store glucose as glycogen, so blood glucose falls. This makes the statement about insulin the correct one. In contrast, adrenaline comes from the adrenal glands and raises blood glucose during stress; glucagon is also produced by the pancreas but it increases, not decreases, blood glucose by promoting glucose release from the liver; and growth hormone is released by the pituitary gland and has growth and metabolic effects rather than pancreatic hormone action.

6. In phototropism, which side accumulates auxin?

- A. Shaded side
- B. Illuminated side
- C. Both sides equally
- D. No auxin movement

When light shines on a shoot, a blue-light sensing mechanism redirects auxin toward the shaded side. Auxin promotes cell elongation in shoots, so the cells on the shaded side lengthen more than those on the illuminated side. This extra growth on the shaded side causes the shoot to bend toward the light. So, the shaded side accumulates auxin. If auxin accumulated on the illuminated side or distributed equally, there would be little or no bending toward the light. If there were no movement of auxin, the bend would not occur either.

7. A special structure that allows living organisms to sense the conditions of their internal or external environment.

- A. Stimulus
- B. Neuron
- C. Effector
- D. Receptor**

Specialized structures called receptors detect changes in the environment, whether inside the body or outside, and start the process of sensing. They are tuned to specific kinds of stimuli, such as light, chemicals, temperature, or touch, and they perform transduction by converting the detected stimulus into an electrical signal that the nervous system can understand. This signal is then carried to the brain or spinal cord for interpretation or reflex action. That's why the receptor is the best choice: it is the structure that does the sensing. A stimulus is simply the change that could trigger a response, not the sensing structure itself. A neuron carries the signal after sensing, but the initial detection happens at the receptor. An effector is the muscle or gland that carries out the response once the information has been processed.

8. Which structure controls pupil diameter in response to light?

- A. The retina
- B. The cornea
- C. The iris**
- D. The sclera

The pupil size is controlled by the iris, which has two sets of muscles that adjust the diameter in response to light. When there is bright light, the circular muscles of the iris contract, making the pupil smaller to limit light entering the eye. In dim light, the radial muscles contract, widening the pupil to let in more light. The retina detects light levels and sends signals that trigger this reflex, but it is the iris that actually changes the pupil diameter. The cornea and sclera are structural parts of the eye and do not regulate pupil size.

9. Which part carries impulses toward the cell body?

- A. Axon
- B. Nucleus
- C. Synapse
- D. Dendrite**

Dendrites are the receiving extensions of a neuron. They pick up signals from other neurons and convey them toward the cell body, allowing the neuron to sum multiple inputs. If the overall signal is strong enough, an impulse is generated and travels along the axon away from the cell body to the next neuron or muscle. The nucleus sits inside the cell body to control activities, and the synapse is the junction where communication occurs between neurons. So, the part that carries impulses toward the cell body is the dendrite.

10. What is the function of the cochlea in the ear?

- A. Converts sound vibrations into electrical impulses via hair cells; contributes to hearing.
- B. Amplifies sound using the ossicles.
- C. Detects balance through semicircular canals.
- D. Filters sound waves before they reach the inner ear.

The cochlea's job is to turn sound vibrations into electrical impulses that the brain can interpret as sound. When the middle ear bones transmit vibrations into the fluid-filled cochlea, hair cells along the organ of Corti bend in response to that movement. This bending opens ion channels, creating a receptor potential and triggering the release of neurotransmitters to the auditory nerve fibers. The signals then travel to the brain, where they are interpreted as different pitches and volumes. The ossicles' role is to amplify vibrations, the semicircular canals detect balance, and filtering of sound waves occurs earlier in the ear, so those functions aren't what the cochlea does.

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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://igcsebiocoordinationresponse.examzify.com>

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

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