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.

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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!

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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 part is the adjustable opening in the center of the eye through which light enters?

A. Iris

B. Pupil

C. Cornea

D. Lens

3. Which muscle controls the size of the lens for near vision?

A. Iris

B. Ciliary muscles

C. Retina

D. Optic nerve

4. Abbreviation for the peripheral nervous system is _____.

A. PNS

B. CNS

C. ANS

D. SNS

5. Which hormone increases blood glucose levels?

A. Glucagon

B. Insulin

C. Estrogen

D. Testosterone

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6. Denaturation refers to which change in a protein?

A. Alteration of 3D shape of protein
B. Change in DNA sequence
C. Increase in enzyme activity
D. Synthesis of proteins

7. Gel-like fluid where the organelles are found is the _____.

A. Cytoplasm
B. Cytosol
C. Nucleoplasm
D. Cytoskeleton

8. In a reflex arc, which component acts as the relay neuron in the CNS?

A. Receptor
B. Relay neuron in CNS
C. Motor neuron
D. Effector

9. What term describes the end-plates of the axon that pass on the signal?

A. Synapse
B. Dendrite
C. Axon terminal buds
D. Nerve

10. Which term describes chemical signals used between neurons?

A. Hormones
B. Neurotransmitters
C. Neurites
D. Enzymes

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Answers

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

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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 part is the adjustable opening in the center of the eye through which light enters?

A. Iris

B. Pupil

C. Cornea

D. Lens

Light enters the eye through an opening in the center of the iris called the pupil. The iris has muscles that adjust this opening, making the pupil larger in dim light to let in more light and smaller in bright light to reduce light. This control helps protect the retina and optimize vision. The cornea and lens then refract and focus the incoming light onto the retina.

3. Which muscle controls the size of the lens for near vision?

A. Iris

B. Ciliary muscles

C. Retina

D. Optic nerve

Accommodation allows the eye to focus on near objects by changing the lens shape. The ciliary muscle is the one that does this. When it contracts, it reduces tension on the suspensory ligaments, causing the lens to become thicker and more curved. This increases the lens's refractive power so light from a close object is properly focused on the retina. The iris controls pupil size, which affects how much light enters but not the lens shape. The retina and optic nerve are involved in sensing and transmitting the image, not in adjusting the lens.

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4. Abbreviation for the peripheral nervous system is _____.

A. PNS

B. CNS

C. ANS

D. SNS

The main idea is distinguishing the parts of the nervous system and their standard abbreviations. The peripheral nervous system refers to all nerves outside the brain and spinal cord, so it is abbreviated as PNS. The brain and spinal cord form the central nervous system (CNS). The autonomic and somatic systems are subdivisions within the peripheral nervous system, abbreviated ANS and SNS, respectively. Since the question asks for the abbreviation of the peripheral nervous system as a whole, PNS is the correct choice.

5. Which hormone increases blood glucose levels?

A. Glucagon

B. Insulin

C. Estrogen

D. Testosterone

Raising blood glucose is controlled by hormones that respond to low sugar levels. When glucose falls, glucagon is released from the pancreas. It tells the liver to break down stored glycogen into glucose and to make new glucose from other sources, sending it into the bloodstream and increasing blood sugar. Insulin does the opposite—promoting uptake of glucose into liver, muscle, and fat and storage as glycogen or fat, which lowers blood glucose. Estrogen and testosterone are sex hormones with other roles and don't directly drive a rapid rise in blood glucose. So the hormone that increases blood glucose levels is glucagon.

6. Denaturation refers to which change in a protein?

A. Alteration of 3D shape of protein

B. Change in DNA sequence

C. Increase in enzyme activity

D. Synthesis of proteins

Denaturation means the protein loses its normal three dimensional shape. The specific shape of a protein is what lets it do its job, especially for enzymes where the active site must fit the substrate. When heat, extreme pH, or chemical agents disrupt the interactions that hold the folded structure together (like hydrogen bonds and ionic bonds), the protein unfolds or misfolds. Without that precise shape, the protein can no longer function properly, so enzyme activity generally drops or is lost. This change is about altering structure, not the DNA sequence or making new proteins: changing DNA would be a mutation, and protein synthesis is the process of building proteins, not altering them after they're made. Denaturation can sometimes be reversible, but often it is not.

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7. Gel-like fluid where the organelles are found is the _____.

A. Cytoplasm

B. Cytosol

C. Nucleoplasm

D. Cytoskeleton

The gel-like interior that holds all the cell's organelles is the cytoplasm. It's the material inside the cell membrane (excluding the nucleus) and includes the semi-fluid cytosol plus the organelles floating in it. The cytosol alone is just the fluid portion, not the entire medium in which organelles reside. The nucleoplasm is the substance inside the nucleus, and the cytoskeleton is the structural network that supports the cell. So the term that best matches the description of the gel-like environment containing organelles is cytoplasm.

8. In a reflex arc, which component acts as the relay neuron in the CNS?

A. Receptor

B. Relay neuron in CNS

C. Motor neuron

D. Effector

The key idea is how a reflex arc moves a signal from detection to action inside the central nervous system. After the receptor detects a stimulus, the sensory neuron carries the impulse into the spinal cord or brain. Inside the CNS, a relay neuron (an interneuron) receives that input and passes it on to a motor neuron. This interneuron acts as the relay, linking the sensory and motor pathways so the impulse reaches the effector quickly, producing a rapid response. The motor neuron is the one that carries the signal to the effector (muscle or gland) to produce the action, and the receptor is the detecter of the stimulus.

9. What term describes the end-plates of the axon that pass on the signal?

A. Synapse

B. Dendrite

C. Axon terminal buds

D. Nerve

The signal leaves a neuron at the end of the axon, so this part is responsible for passing the message on. The end of the axon where this happens is the axon terminal, often called a terminal bouton or axon terminal bud. It stores neurotransmitters in vesicles and releases them into the synaptic gap when the impulse arrives, allowing the signal to cross to the next neuron or a muscle cell. The other terms describe different things: a synapse is the junction itself, a dendrite is the receiving part of a neuron, and a nerve is a bundle of many neurons.

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10. Which term describes chemical signals used between neurons?

A. Hormones

B. Neurotransmitters

C. Neurites

D. Enzymes

Between neurons, chemical signals are neurotransmitters. They are released by the first neuron into the tiny gap at a synapse, diffuse across it, and attach to receptors on the next neuron, triggering or inhibiting an electrical impulse. This enables rapid, targeted communication in the nervous system. Hormones, in contrast, travel through the bloodstream to affect distant organs and aren't used for sending signals directly from one neuron to another. Neurites are the projections of a neuron (axons and dendrites), not signaling molecules, and enzymes are catalysts that speed up chemical reactions rather than act as nerve signals. So neurotransmitters are the signaling chemicals used between neurons.

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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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