IGCSE Biology – Coordination and Response Practice Test (Sample)

Study Guide

BY EXAMZIFY

Everything you need from our exam experts!

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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

1. Which hormone is the male sex hormone?

A. Estrogen

B. Insulin

C. Glucagon

D. Testosterone

2. Another name for a relay neuron is the _____.

A. Interneuron

B. Motor neuron

C. Sensory neuron

D. Neuron

3. Which component transmits signals from the CNS to muscles and glands?

A. Sensory neuron

B. Receptor

C. Nerve endings

D. Motor neuron

4. What is the function of a sensory neuron?

A. Transmit impulses from CNS to effector

B. Detect stimuli

C. Transmit impulses from receptor to CNS

D. Store information

5. Which part of the nervous system interprets signals from sense organs?

A. Peripheral nervous system

B. Central nervous system

C. Autonomic nervous system

D. Enteric nervous system

6. A stimulus is

- **A. An external factor that causes a reaction**
- **B. An internal factor that causes a reaction**
- **C. Any external or internal factor that causes a living organism to react**
- **D. A factor that causes a reaction**

7. A division of the nervous system consisting of sensory and motor nerves that are not part of the brain or spinal cord is the _____.

- **A. Peripheral nervous system**
- **B. Central nervous system**
- **C. Autonomic nervous system**
- **D. Somatic nervous system**

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

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

9. Which effect does insulin have on body cells?

- **A. Increases glucose uptake**
- **B. Decreases glucose uptake**
- **C. Inhibits glycogen synthesis**
- **D. Increases glucose production by liver**

10. Which part of the eye controls pupil size?

- **A. Pupil**
- **B. Ciliary body**
- **C. Retina**
- **D. Iris**

Answers

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

Explanations

1. Which hormone is the male sex hormone?

A. Estrogen

B. Insulin

C. Glucagon

D. Testosterone

Testosterone is the male sex hormone. It's an androgen produced mainly in the testes and is responsible for developing and maintaining male traits, especially during puberty—like facial and body hair, a deeper voice, and increased muscle and bone mass. It also supports sperm production with the help of other hormones. Estrogen is the female sex hormone (and small amounts are made in males), while insulin and glucagon control blood glucose, not sexual characteristics.

2. Another name for a relay neuron is the _____.

A. Interneuron

B. Motor neuron

C. Sensory neuron

D. Neuron

Relays neurons, or interneurons, operate entirely within the central nervous system to pass signals from one neuron to another. They sit between sensory neurons and motor neurons, receiving input from a sensory neuron and transmitting the message onward to a motor neuron, which then activates an effect. This arrangement is key in reflexes and in processing information in the spinal cord and brain. A sensory neuron brings information from a stimulus to the CNS, but it doesn't relay to other neurons within the CNS. A motor neuron carries the signal from the CNS to an effector like a muscle. A general neuron isn't specific to the connective role. So the term that best fits a relay neuron is interneuron.

3. Which component transmits signals from the CNS to muscles and glands?

A. Sensory neuron

B. Receptor

C. Nerve endings

D. Motor neuron

The key idea is the direction of signaling: signals that trigger a response in muscles or glands travel from the CNS out to the effectors through motor (efferent) neurons. These neurons carry impulses away from the brain and spinal cord to muscles, causing contraction, or to glands, causing secretion. Sensory neurons do the opposite role, carrying information from receptors in the body toward the CNS to be processed. Receptors and nerve endings are parts of the sensing process, not the command path that tells muscles or glands what to do. So, the component that transmits signals from the CNS to muscles and glands is the motor neuron.

4. What is the function of a sensory neuron?

A. Transmit impulses from CNS to effector

B. Detect stimuli

C. Transmit impulses from receptor to CNS

D. Store information

The main idea here is the direction in which the signal travels. Sensory neurons carry information from sensory receptors toward the brain or spinal cord, linking the detection of a stimulus to the processing center. They detect changes such as touch, temperature, or light at their receptor endings and convert that input into electrical impulses that travel along the neuron to the CNS for interpretation. This is why their job is to transmit impulses from receptor to CNS. If impulses were sent from the CNS to a muscle or gland, that would be the job of motor neurons; simply detecting stimuli isn't the function of the neuron itself (the receptors or specialized sensory cells handle initial detection), and storing information isn't the role of these neurons either.

5. Which part of the nervous system interprets signals from sense organs?

A. Peripheral nervous system

B. Central nervous system

C. Autonomic nervous system

D. Enteric nervous system

Interpreting signals from sense organs happens in the central nervous system, which includes the brain and spinal cord. Sense organs pick up stimuli and turn them into nerve impulses that travel to the CNS via sensory neurons. Within the CNS, the brain analyzes these impulses to produce perception and an appropriate response (heightened awareness or action). The peripheral nervous system simply carries messages to and from the CNS, while the autonomic and enteric systems manage involuntary functions and gut activity, not the conscious interpretation of sensory information. Some quick reflexes can involve the spinal cord, but full interpretation occurs in the brain, part of the central nervous system.

6. A stimulus is

A. An external factor that causes a reaction

B. An internal factor that causes a reaction

C. Any external or internal factor that causes a living organism to react

D. A factor that causes a reaction

A stimulus is any detectable change that leads to a response in a living organism. It can come from outside the body (like light, temperature, touch, or a chemical in the environment) or from inside the body (such as changes in hormone levels, blood sugar, or CO_2 concentration). The key idea is that the organism senses something and that detection prompts a reaction. That's why the best answer includes both external and internal factors that can trigger responses. Saying it's only external or only internal misses part of how organisms respond, and calling it merely "a factor that causes a reaction" is too vague because it doesn't specify that the factor is something the organism perceives as a signal.

7. A division of the nervous system consisting of sensory and motor nerves that are not part of the brain or spinal cord is the _____.

A. Peripheral nervous system

B. Central nervous system

C. Autonomic nervous system

D. Somatic nervous system

The main idea is that this division includes all nerves outside the brain and spinal cord, linking the central nervous system to the rest of the body. The peripheral nervous system is made up of sensory nerves that carry information from receptors to the brain and spinal cord, and motor nerves that carry commands from the brain and spinal cord to muscles and glands. Since these nerves aren't located in the brain or spinal cord, they belong to the peripheral nervous system. Within it are subdivisions like somatic (controls voluntary movements and carries sensory information from the skin) and autonomic (controls involuntary functions), but the description points to the peripheral nervous system as a whole.

8. 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.

9. Which effect does insulin have on body cells?

A. Increases glucose uptake

B. Decreases glucose uptake

C. Inhibits glycogen synthesis

D. Increases glucose production by liver

Insulin's main action is to lower blood glucose by helping body cells take in glucose from the bloodstream. In muscle and fat tissue, insulin triggers GLUT4 transporters to move to the cell membrane, so more glucose can enter the cells and be used for energy or stored as glycogen or fat. This is why glucose level in the blood drops after a meal when insulin is released. The other ideas don't fit: insulin doesn't reduce uptake, it increases it; it doesn't inhibit glycogen synthesis, it promotes it; and it doesn't raise glucose production by the liver, it actually helps suppress hepatic glucose output and promote storage. Brain cells mainly take up glucose without insulin, but the key effect on most body cells is increased glucose uptake.

10. Which part of the eye controls pupil size?

A. Pupil

B. Ciliary body

C. Retina

D. Iris

Pupil size is controlled by the iris, the colored ring around the pupil. The iris has two smooth muscle groups: circular muscles that contract to make the pupil smaller in bright light, and radial muscles that contract to make the pupil larger in dim light. These muscles respond to autonomic signals, so the eye automatically adjusts how much light enters. The pupil itself is just an opening, so it's the iris that changes its size. The retina detects light and the ciliary body adjusts lens focus, but neither directly controls pupil diameter.

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!