

New CED - Biological Basis of Behavior Practice Exam (Sample)

Study Guide



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

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- 1. Which hormone is primarily associated with stress responses and is regulated by the HPA axis?**
 - A. Insulin**
 - B. Cortisol**
 - C. Adrenaline**
 - D. Serotonin**

- 2. Who studies the links between genetics, neural systems, and psychological processes?**
 - A. Sociologists**
 - B. Biological psychologists**
 - C. Developmental psychologists**
 - D. Cognitive psychologists**

- 3. What term describes the state of a neuron when it is not sending signals or being stimulated?**
 - A. Resting potential**
 - B. Activation potential**
 - C. Refractory period**
 - D. Hyperpolarization**

- 4. What is the primary role of the primary motor cortex?**
 - A. Processing auditory information**
 - B. Controlling voluntary movements**
 - C. Regulating emotions**
 - D. Facilitating language comprehension**

- 5. Which hormone is primarily associated with the body's stress response?**
 - A. Adrenaline**
 - B. Insulin**
 - C. Cortisol**
 - D. Serotonin**

- 6. What are nerves composed of?**
- A. Neurons only**
 - B. Bundled axons**
 - C. Synapses and neurotransmitters**
 - D. Glial cells**
- 7. Which part of the neuron transmits impulses away from the cell body?**
- A. The dendrites**
 - B. The axon**
 - C. The synapse**
 - D. The soma**
- 8. Which term describes the natural equilibrium attained by a neuron when it is not firing?**
- A. Action potential**
 - B. Resting potential**
 - C. Threshold potential**
 - D. Neuronal stability**
- 9. What is an electroencephalogram (EEG) used to measure?**
- A. Heart activity**
 - B. Blood pressure**
 - C. Electrical activity in the brain**
 - D. Muscle contractions**
- 10. Which part of the nervous system includes the brain and spinal cord?**
- A. Peripheral nervous system**
 - B. Sensory nervous system**
 - C. Central nervous system**
 - D. Somatic nervous system**

Answers

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

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Explanations

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1. Which hormone is primarily associated with stress responses and is regulated by the HPA axis?

- A. Insulin
- B. Cortisol**
- C. Adrenaline
- D. Serotonin

Cortisol is the hormone primarily associated with stress responses and is regulated by the hypothalamic-pituitary-adrenal (HPA) axis. When an individual perceives a stressor, the HPA axis is activated, leading to the release of corticotropin-releasing hormone (CRH) from the hypothalamus. This hormone stimulates the pituitary gland to release adrenocorticotropic hormone (ACTH), which then prompts the adrenal glands to secrete cortisol into the bloodstream. Cortisol plays a crucial role in the body's response to stress by increasing glucose availability, suppressing non-essential functions, and modulating immune responses. Its effects help the body to manage and cope with stressors effectively, making it a key player in the stress response system. In contrast, insulin is primarily involved in glucose metabolism, adrenaline is involved in the immediate fight-or-flight response rather than long-term stress regulation, and serotonin is more closely linked to mood regulation and well-being, rather than directly tied to the physiological responses associated with stress.

2. Who studies the links between genetics, neural systems, and psychological processes?

- A. Sociologists
- B. Biological psychologists**
- C. Developmental psychologists
- D. Cognitive psychologists

The study of the links between genetics, neural systems, and psychological processes falls squarely within the field of biological psychology. Biological psychologists explore how biological factors, such as brain structures, neurotransmitters, and genetic influences, affect behavior, thoughts, and emotions. They examine the intricate relationships between the nervous system's functioning and psychological phenomena, providing insights into how biological components contribute to mental processes and behavior. This focus on the interplay between biology and psychology distinguishes biological psychologists from other disciplines like sociologists, who study social behavior and structures; developmental psychologists, who focus on human growth and change across the lifespan; and cognitive psychologists, whose emphasis is primarily on mental processes such as perception, memory, and problem-solving.

3. What term describes the state of a neuron when it is not sending signals or being stimulated?

- A. Resting potential**
- B. Activation potential**
- C. Refractory period**
- D. Hyperpolarization**

The state of a neuron when it is not sending signals or being stimulated is referred to as the resting potential. During this period, the neuron maintains a stable, negative internal charge relative to the outside environment, typically around -70 millivolts. This resting state is crucial for the neuron to be prepared for action potentials, which occur when the neuron is activated by stimuli. Resting potential is maintained by the distribution of ions across the neuron's membrane, particularly sodium and potassium ions, with sodium channels being closed and potassium channels allowing limited permeability. This electrical gradient is fundamental for the signaling processes of neurons. The other terms in the choices refer to different aspects of neuronal signaling. The activation potential is not a standard term; rather, action potential is used to describe the rapid rise and fall of voltage during signal transmission. The refractory period refers to the time following an action potential when a neuron is unable to fire another action potential due to ion channel dynamics. Hyperpolarization is a phase where the membrane potential becomes more negative than the resting potential, but it still occurs within the context of action potentials and is not indicative of the resting state.

4. What is the primary role of the primary motor cortex?

- A. Processing auditory information**
- B. Controlling voluntary movements**
- C. Regulating emotions**
- D. Facilitating language comprehension**

The primary motor cortex is primarily responsible for controlling voluntary movements. It is located in the frontal lobe of the brain and is directly involved in planning and executing movements by sending signals to the muscles. This area of the brain is organized somatotopically, meaning that different regions correspond to different parts of the body, with the areas controlling finer movements, such as those of the hands and face, being more prominent. This organization highlights the motor cortex's critical role in coordinating voluntary actions essential for interaction with the environment and performing complex tasks. Other options, such as processing auditory information or regulating emotions, relate to different areas of the brain. For instance, auditory processing primarily occurs in the auditory cortex, while emotional regulation is largely managed by structures such as the amygdala and prefrontal cortex. Similarly, language comprehension is a function associated with Broca's and Wernicke's areas, not the primary motor cortex. Understanding these distinctions clarifies why the primary motor cortex's main function is specifically geared towards controlling voluntary movements.

5. Which hormone is primarily associated with the body's stress response?

- A. Adrenaline**
- B. Insulin**
- C. Cortisol**
- D. Serotonin**

Cortisol is primarily associated with the body's stress response because it plays a crucial role in the body's reaction to stressors. Produced by the adrenal glands, cortisol is often referred to as the "stress hormone," as it is released in higher quantities during stressful situations. This hormone helps to regulate various functions in the body, including metabolism, immune response, and blood pressure, all of which are vital when responding to stress. During a stressful encounter, the hypothalamus signals the adrenal glands to release cortisol, which prepares the body for a "fight or flight" reaction. It increases glucose availability for energy, suppresses non-essential functions like digestion and reproduction, and modulates the immune response to prevent excessive inflammation, allowing the individual to more effectively deal with the stressor. In contrast, adrenaline (or epinephrine) also plays a role in the immediate stress response but is more involved in the initial burst of energy and heightened alertness. Insulin's primary function is related to blood sugar regulation rather than stress response. Serotonin is primarily associated with mood regulation and does not have a direct role in managing stress like cortisol does.

6. What are nerves composed of?

- A. Neurons only**
- B. Bundled axons**
- C. Synapses and neurotransmitters**
- D. Glial cells**

Nerves are primarily composed of bundled axons, which are the long, slender projections of neurons that transmit electrical impulses away from the cell body. In a nerve, many of these axons are grouped together, enclosed in connective tissue, allowing them to function as a single entity that communicates signals between the central and peripheral nervous systems. While neurons are indeed essential components of nerves, saying that nerves consist solely of neurons doesn't account for the structural organization that includes the axons. Similarly, synapses and neurotransmitters are involved in the communication between neurons, but they do not make up the physical structure of nerves themselves. Glial cells are crucial for supporting and protecting neurons, but they also do not constitute the primary composition of nerves. The correct answer reflects the functional and structural reality of nerves as bundles of axons that enable the nervous system to perform its vital roles in bodily communication and coordination.

7. Which part of the neuron transmits impulses away from the cell body?

- A. The dendrites
- B. The axon**
- C. The synapse
- D. The soma

The axon is the part of the neuron responsible for transmitting impulses away from the cell body. It serves as a long, slender projection that conducts electrical signals called action potentials to other neurons, muscles, or glands. The structure of the axon allows it to effectively transmit information over distances, making it crucial for communication within the nervous system. Dendrites, on the other hand, are the branched projections of a neuron that receive signals from other neurons and convey this information toward the cell body. The synapse refers to the junction between two neurons where communication occurs, typically involving the release of neurotransmitters. The soma, or cell body, contains the nucleus and organelles of the neuron and integrates incoming signals but does not transmit impulses away from itself. Thus, the axon is specifically designed for transmitting impulses away from the cell body, which is why it is the correct answer.

8. Which term describes the natural equilibrium attained by a neuron when it is not firing?

- A. Action potential
- B. Resting potential**
- C. Threshold potential
- D. Neuronal stability

The term that describes the natural equilibrium attained by a neuron when it is not firing is resting potential. This state occurs when the neuron is at rest and not transmitting signals, characterized by a specific electrical charge difference across its membrane. During resting potential, the interior of the neuron is negatively charged relative to the outside, typically around -70 millivolts, due to the distribution of ions, particularly sodium and potassium. This polarized state is essential because it prepares the neuron for potential firing; if stimulated sufficiently, it can reach a threshold potential and generate an action potential. Understanding resting potential is crucial as it underlies the basic functioning of neuronal communication in the nervous system.

9. What is an electroencephalogram (EEG) used to measure?

- A. Heart activity
- B. Blood pressure
- C. Electrical activity in the brain**
- D. Muscle contractions

An electroencephalogram (EEG) is specifically used to measure the electrical activity in the brain. It does this by placing electrodes on the scalp, which detect the electrical impulses produced by the neurons as they communicate with one another. This makes EEG a valuable tool in both clinical and research settings, particularly for diagnosing conditions such as epilepsy, sleep disorders, and monitoring brain activity during surgery. Unlike other options, which pertain to different bodily systems, EEG focuses solely on the brain's electrical activity, providing insights into its functioning.

10. Which part of the nervous system includes the brain and spinal cord?

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

The central nervous system is the primary component of the nervous system that encompasses both the brain and the spinal cord. Its main function is to process information and coordinate actions throughout the body. The brain serves as the control center, integrating sensory information, making decisions, and regulating vital functions, while the spinal cord acts as a vital communication pathway, relaying signals between the brain and the rest of the body. This unique organization within the central nervous system allows for higher-order functions, such as thinking, learning, and emotional responses, as well as essential reflexes and automatic processes. In contrast, the peripheral nervous system involves all the nerves outside the central nervous system, connecting the brain and spinal cord to limbs and organs. The sensory nervous system refers specifically to the components responsible for receiving and processing sensory information from the environment. The somatic nervous system is a subset of the peripheral nervous system that primarily controls voluntary movements and transmits sensory information from the body to the central nervous system. Thus, identifying the central nervous system is essential for understanding its integral role in overall functioning and behavior.

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://newcedbiobasisofbehavior.examzify.com>

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

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