

# Nervous System A&P Practice Test (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. Acetylcholine is primarily involved in what type of signaling?**
  - A. Inhibitory synaptic signaling**
  - B. Excitatory synaptic signaling**
  - C. Both inhibitory and excitatory signaling**
  - D. Hormonal signaling**
  
- 2. What are the ridges in the cerebrum called?**
  - A. Sulci**
  - B. Gyri**
  - C. Fissures**
  - D. Auricles**
  
- 3. What are the two divisions of the autonomic nervous system (ANS)?**
  - A. Central and Peripheral**
  - B. Somatic and Autonomic**
  - C. Parasympathetic and Sympathetic**
  - D. Afferent and Efferent**
  
- 4. Which neurotransmitter is known for its role in mood regulation?**
  - A. Dopamine**
  - B. Serotonin**
  - C. Norepinephrine**
  - D. Acetylcholine**
  
- 5. Which of the following parts of the nervous system aids in maintaining homeostasis by regulating visceral activities?**
  - A. Sympathetic Nervous System**
  - B. Cerebral Cortex**
  - C. Autonomic Nervous System**
  - D. Central Nervous System**

- 6. What is the primary role of neuroglia?**
- A. Transmit impulses**
  - B. Insulate neurons**
  - C. Support and protect neurons**
  - D. Generate nerve impulses**
- 7. Which part of the brain is responsible for controlling visual and auditory reflexes?**
- A. Cerebellum**
  - B. Medulla**
  - C. Midbrain**
  - D. Thalamus**
- 8. What is the role of cholinesterase in neuronal function?**
- A. It synthesizes acetylcholine.**
  - B. It releases neurotransmitters.**
  - C. It deactivates acetylcholine.**
  - D. It transmits nerve impulses.**
- 9. What type of cells are primarily responsible for transmitting impulses in the nervous system?**
- A. Neuroglia**
  - B. Neurons**
  - C. Afferent cells**
  - D. Efferent cells**
- 10. Which lobe of the brain is involved with sensory functions such as interpreting pain and temperature?**
- A. Frontal lobe**
  - B. Temporal lobe**
  - C. Parietal lobe**
  - D. Occipital lobe**

## Answers

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

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## **Explanations**

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**1. Acetylcholine is primarily involved in what type of signaling?**

- A. Inhibitory synaptic signaling**
- B. Excitatory synaptic signaling**
- C. Both inhibitory and excitatory signaling**
- D. Hormonal signaling**

Acetylcholine plays a crucial role in both inhibitory and excitatory synaptic signaling across various parts of the nervous system. In excitatory synaptic signaling, acetylcholine acts by binding to nicotinic receptors, primarily found in the central nervous system and the neuromuscular junction, leading to depolarization of the postsynaptic cell and promoting the generation of an action potential. This is especially important in facilitating muscle contractions and various cognitive processes. Conversely, acetylcholine can also mediate inhibitory effects, particularly through its action on muscarinic receptors, which can lead to hyperpolarization in certain neuronal pathways, affecting heart rate and various other autonomic functions. This dual capability allows acetylcholine to participate in a wide range of physiological processes, emphasizing its versatility as a neurotransmitter involved in both types of signaling within the nervous system.

**2. What are the ridges in the cerebrum called?**

- A. Sulci**
- B. Gyri**
- C. Fissures**
- D. Auricles**

The ridges in the cerebrum are referred to as gyri. These structures are crucial for increasing the surface area of the brain, allowing for a greater number of neurons to be packed into the cerebral cortex. This increase in surface area enhances the brain's ability to process information and function effectively. The grooves or indentations between the gyri are known as sulci, which serve to separate adjacent gyri and contribute to the overall folding of the cerebral cortex. Fissures are deeper grooves that can separate major regions of the brain, while auricles are unrelated anatomical structures typically found in the heart. Understanding the terminology associated with brain anatomy, such as gyri and sulci, is essential for studying the organization and function of the nervous system.

### 3. What are the two divisions of the autonomic nervous system (ANS)?

- A. Central and Peripheral
- B. Somatic and Autonomic
- C. Parasympathetic and Sympathetic**
- D. Afferent and Efferent

The autonomic nervous system (ANS) is a critical component of the peripheral nervous system responsible for regulating involuntary physiological functions. It primarily consists of two divisions: the sympathetic and parasympathetic systems. The sympathetic division is often associated with the body's fight-or-flight response, preparing the organism to respond to stressful situations. It increases heart rate, dilates pupils, and inhibits digestive processes, among other effects. In contrast, the parasympathetic division is known for its restorative functions, promoting a state of rest and digestion. It slows the heart rate, constricts pupils, and stimulates digestive activities, allowing the body to conserve energy and enhance recovery. This division of the autonomic nervous system is crucial for maintaining homeostasis, seamlessly managing the body's involuntary actions in response to internal and external stimuli. Understanding these two divisions helps highlight how the ANS maintains a balance between energy expenditure and conservation.

### 4. Which neurotransmitter is known for its role in mood regulation?

- A. Dopamine
- B. Serotonin**
- C. Norepinephrine
- D. Acetylcholine

The neurotransmitter known for its significant role in mood regulation is serotonin. It is primarily found in the brain, bowels, and blood platelets and is often referred to as the "feel-good" neurotransmitter. Serotonin contributes to various functions, including mood stabilization, emotional well-being, and the regulation of anxiety and happiness levels. An imbalance in serotonin levels has been linked to mood disorders such as depression and anxiety, which is why many antidepressant medications are designed to increase serotonin availability in the brain. While dopamine, norepinephrine, and acetylcholine play important roles in the nervous system, their primary functions do not focus solely on mood regulation. Dopamine is more associated with reward and pleasure systems in the brain, influencing motivation and motor control. Norepinephrine is primarily involved in the body's 'fight or flight' response and attention regulation. Acetylcholine is crucial for muscle activation and is involved in memory and learning but is not directly tied to mood regulation. Thus, serotonin stands out as the key neurotransmitter in the context of mood.

**5. Which of the following parts of the nervous system aids in maintaining homeostasis by regulating visceral activities?**

- A. Sympathetic Nervous System**
- B. Cerebral Cortex**
- C. Autonomic Nervous System**
- D. Central Nervous System**

The autonomic nervous system is the correct choice because it plays a crucial role in regulating involuntary bodily functions necessary for maintaining homeostasis, such as heart rate, blood pressure, respiration, digestion, and sexual arousal. This system operates without conscious control, allowing the body to automatically adjust to changes in internal and external environments. It is divided into two main branches: the sympathetic nervous system, which prepares the body for 'fight or flight' situations, and the parasympathetic nervous system, which promotes 'rest and digest' activities, working together to balance the body's responses and maintain homeostasis. The sympathetic nervous system does contribute to homeostasis but primarily in stressful situations rather than through ongoing regulation of everyday bodily functions. The cerebral cortex, while essential for higher cognitive functions and voluntary actions, does not directly regulate visceral activities. The central nervous system comprises the brain and spinal cord and integrates information but does not directly maintain visceral homeostasis; that function is primarily the responsibility of the autonomic nervous system.

**6. What is the primary role of neuroglia?**

- A. Transmit impulses**
- B. Insulate neurons**
- C. Support and protect neurons**
- D. Generate nerve impulses**

The primary role of neuroglia, or glial cells, is to support and protect neurons. These cells are essential components of the nervous system, providing a variety of functions that enhance the overall health and efficiency of neurons. Neuroglia do not transmit electrical impulses like neurons; instead, they maintain homeostasis, form myelin, and provide support and nourishment to the neurons. Neuroglia also play a crucial role in the development and maintenance of the nervous system, facilitating communication between neurons. By creating an optimal environment for neuronal function, neuroglia ensure that neurons can effectively transmit signals. Thus, their supportive role is vital for the overall functioning of the nervous system.

**7. Which part of the brain is responsible for controlling visual and auditory reflexes?**

- A. Cerebellum**
- B. Medulla**
- C. Midbrain**
- D. Thalamus**

The midbrain plays a crucial role in controlling visual and auditory reflexes due to its anatomical and functional characteristics. Located near the center of the brain, it contains several important structures, including the superior and inferior colliculi, which are directly involved in processing visual and auditory information. The superior colliculus is primarily responsible for visual reflexes, such as the reflexive movement of the eyes in response to visual stimuli, allowing individuals to quickly react to what they see. The inferior colliculus, on the other hand, is associated with auditory reflexes and helps in orienting the head and eyes toward sound sources. This ability to coordinate reflexive actions based on visual and auditory stimuli is essential for survival and interaction with the environment. Understanding the specific roles of these brain regions highlights the midbrain's importance in sensory processing and reflexive behavior, reinforcing its designation as the part of the brain responsible for these reflexes.

**8. What is the role of cholinesterase in neuronal function?**

- A. It synthesizes acetylcholine.**
- B. It releases neurotransmitters.**
- C. It deactivates acetylcholine.**
- D. It transmits nerve impulses.**

Cholinesterase plays a vital role in neuronal function by deactivating acetylcholine, which is a key neurotransmitter in the nervous system. Once acetylcholine is released into the synaptic cleft during neurotransmission, it binds to receptors on the postsynaptic neuron to facilitate communication between nerve cells. However, it is essential to terminate this signal promptly to prevent continuous stimulation of the postsynaptic neuron, which could lead to issues like muscle spasms or paralysis. Cholinesterase achieves this by breaking down acetylcholine into its components, acetate and choline, effectively stopping its action at the synapse. This deactivation process ensures that nerve impulses are regulated and that communication between neurons occurs in a controlled manner. The other roles mentioned in the answer choices are not functions of cholinesterase. For instance, cholinesterase does not synthesize acetylcholine; that task is performed by the enzyme acetyltransferase. It also does not release neurotransmitters or transmit nerve impulses directly; those functions are handled by different cellular mechanisms and proteins within the neuron. Thus, the critical function of cholinesterase is specifically to deactivate acetylcholine, allowing for precise control over neurotransmission.

**9. What type of cells are primarily responsible for transmitting impulses in the nervous system?**

- A. Neuroglia**
- B. Neurons**
- C. Afferent cells**
- D. Efferent cells**

Neurons are the primary cells responsible for transmitting impulses in the nervous system. They are specialized cells designed to carry signals throughout the body, allowing for communication between the brain, spinal cord, and peripheral tissues. Neurons have unique structures, including dendrites for receiving signals, a cell body where the nucleus resides, and an axon that transmits impulses away from the cell body. The transmission occurs via electrical impulses known as action potentials, which travel along the axon and are propagated at synapses to communicate with other neurons or target tissues. Neuroglia, while important for supporting and protecting neurons, do not transmit impulses themselves; rather, they provide essential functions such as nutrient support, insulation, and maintenance of the extracellular environment. Afferent cells refer to sensory neurons that carry signals toward the central nervous system, and efferent cells refer to motor neurons that carry signals away from the central nervous system. While these terms describe types of neurons, they do not encompass the entire function of neurons in relation to impulse transmission. Therefore, the broad and encompassing role of neurons in both sensory and motor functions, as well as their fundamental role in signal transmission, makes them the key players in this process.

**10. Which lobe of the brain is involved with sensory functions such as interpreting pain and temperature?**

- A. Frontal lobe**
- B. Temporal lobe**
- C. Parietal lobe**
- D. Occipital lobe**

The parietal lobe is specifically responsible for processing and interpreting sensory information, which includes sensations such as pain, temperature, touch, and proprioception (the sense of body position). Located at the top of the brain, the parietal lobe houses the primary somatosensory cortex, which receives input from sensory receptors throughout the body and allows for the perception of these various sensations. This lobe integrates sensory data and plays a crucial role in spatial awareness and navigation, making it essential for the interpretation of sensory experiences. In contrast, the frontal lobe is primarily involved in higher cognitive functions like decision-making and problem-solving, the temporal lobe is associated with auditory processing and memory, and the occipital lobe is dedicated to visual processing. This distinction highlights the specialized functions of the parietal lobe in relation to sensory interpretation.

## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://nervoussysaandp.examzify.com>**

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

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