

# Comprehensive Psychology and Neuroscience Key Concepts and Theories 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. What does reliability refer to in psychological measurement?**
  - A. Consistency of a measure over time**
  - B. Validity of what it measures**
  - C. Descriptive statistics adequacy**
  - D. Sample size representativeness**
  
- 2. Which statement correctly describes the autonomic nervous system?**
  - A. It controls involuntary functions and includes sympathetic and parasympathetic divisions**
  - B. It controls voluntary movement only**
  - C. It processes conscious thought**
  - D. It conveys information from muscles to bones**
  
- 3. Which theory argues that psychology should study observable behavior and disregard mental states?**
  - A. Behaviorism**
  - B. Psychoanalysis**
  - C. Cognitivism**
  - D. Humanism**
  
- 4. Which term describes bias arising from participants' belief they are receiving an active treatment?**
  - A. Placebo effect**
  - B. Experimenter expectancy**
  - C. Confounding variable**
  - D. Descriptive statistics**
  
- 5. Activation of the action potential from resting membrane potential is an example of which type of signaling?**
  - A. Electrical signaling**
  - B. Chemical signaling**
  - C. Hormonal signaling**
  - D. Mechanical signaling**

- 6. Which structure is part of the Central Nervous System?**
- A. Brain and spinal cord**
  - B. Peripheral nerves**
  - C. Autonomic ganglia**
  - D. Spinal nerves only**
- 7. Which neurotransmitter is associated with fast excitatory signaling in the brain?**
- A. Glutamate**
  - B. GABA**
  - C. Dopamine**
  - D. Acetylcholine**
- 8. Which term refers to the base of the brain comprising medulla oblongata, pons, and midbrain?**
- A. Brain Stem**
  - B. Spinal Cord**
  - C. Cerebral Cortex**
  - D. Hypothalamus**
- 9. Which branch of statistics reveals differences between groups?**
- A. Inferential statistics**
  - B. Descriptive statistics**
  - C. Correlational analysis**
  - D. Experimental design**
- 10. Small modules at the end of axons that release chemicals into the synapse are called**
- A. Terminal buttons**
  - B. Dendrites**
  - C. Synapses**
  - D. Nodes of Ranvier**

## Answers

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

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## **Explanations**

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**1. What does reliability refer to in psychological measurement?**

- A. Consistency of a measure over time**
- B. Validity of what it measures**
- C. Descriptive statistics adequacy**
- D. Sample size representativeness**

Reliability means consistency in measurement. A measure is reliable when it yields stable, repeatable results under consistent conditions, such as scores that stay the same across repeated testing, measures that hang together coherently across items, or ratings that agree across different raters. This focus on stability over time is what makes consistency of a measure over time the best description. It's possible for a test to be reliable but not valid, meaning it's consistently wrong about what it's supposed to measure. The other concepts touch on accuracy of what's being measured or on sampling and data summaries, not on the repeatability of the measurement itself.

**2. Which statement correctly describes the autonomic nervous system?**

- A. It controls involuntary functions and includes sympathetic and parasympathetic divisions**
- B. It controls voluntary movement only**
- C. It processes conscious thought**
- D. It conveys information from muscles to bones**

The autonomic nervous system regulates functions that happen without our conscious input. It keeps essential processes like heart rate, digestion, respiration, pupil size, and gland activity operating smoothly and adapts them as needed. It has two main branches that often work in opposition to maintain balance: the sympathetic division readies the body for action (think faster heartbeat, expanded airways, reduced digestion when necessary), while the parasympathetic division promotes relaxation and routine maintenance (slower heart rate, digestion activated, pupils normal). This dual system allows automatic adjustments to meet changing demands. The other statements refer to parts of the nervous system that aren't autonomic. Voluntary movement is governed by the somatic motor pathways, conscious thought is largely handled by cognitive brain regions, and conveying information from muscles to bones pertains to somatic sensory-motor communication rather than automatic regulation.

**3. Which theory argues that psychology should study observable behavior and disregard mental states?**

**A. Behaviorism**

**B. Psychoanalysis**

**C. Cognitivism**

**D. Humanism**

This question tests the idea that psychology should be grounded in observable behavior. Behaviorism holds that psychology should study outward, measurable actions and responses, and it argues that mental states—like thoughts and feelings—are either unobservable or not treatable as scientific data. By focusing on stimulus-response relationships and the effects of reinforcement and punishment, behaviorism aims for objective, quantifiable findings. This perspective was developed by thinkers such as John Watson and later refined by B.F. Skinner, who argued that understanding behavior is enough to explain psychological phenomena. In contrast, psychoanalysis centers on unconscious drives and internal conflicts, cognitivism emphasizes mental processes like memory and problem-solving, and humanism highlights subjective experience and personal growth. Because this item specifies studying observable behavior and disregarding mental states, behaviorism is the best fit.

**4. Which term describes bias arising from participants' belief they are receiving an active treatment?**

**A. Placebo effect**

**B. Experimenter expectancy**

**C. Confounding variable**

**D. Descriptive statistics**

The main concept is the placebo effect: when a participant believes they are receiving an active treatment, that belief can produce real improvements in symptoms or outcomes even though the treatment is inert. This happens because expectations can shape perception and even brain processing, so simply thinking you're being helped can lead to noticeable changes. This is why it's considered bias arising from the participant's belief about the treatment. In trials, researchers counteract this with control groups and often a double-blind design so neither participants nor researchers know who gets the real treatment, helping ensure observed effects come from the treatment itself rather than expectations. The other options don't fit this specific bias. Experimenter expectancy bias involves the researcher's expectations influencing the results, not the participant's beliefs about receiving treatment. A confounding variable is an outside factor that correlates with the treatment and the outcome, potentially distorting the apparent effect. Descriptive statistics are merely summaries of data, not a bias stemming from belief about treatment.

**5. Activation of the action potential from resting membrane potential is an example of which type of signaling?**

- A. Electrical signaling**
- B. Chemical signaling**
- C. Hormonal signaling**
- D. Mechanical signaling**

The activation of an action potential is an electrical signaling event. When a neuron at rest reaches threshold, voltage-gated Na<sup>+</sup> channels open and cause a rapid influx of ions, depolarizing the membrane and creating a wave of electrical change that travels along the axon. This propagation relies on changes in membrane potential and ion flow, so the message is carried by electrical energy rather than by chemical messengers. While neurotransmitters may be released afterward to communicate with other cells, the initial signal itself is electrical. In contrast, chemical signaling uses diffusing molecules, hormonal signaling involves circulating hormones, and mechanical signaling depends on physical deformation—none of which describe the rapid voltage changes that define an action potential.

**6. Which structure is part of the Central Nervous System?**

- A. Brain and spinal cord**
- B. Peripheral nerves**
- C. Autonomic ganglia**
- D. Spinal nerves only**

The central nervous system consists of the brain and spinal cord. These structures act as the main processing and control center, integrating sensory information, planning actions, and coordinating responses. The peripheral nervous system, which lies outside the brain and spinal cord, includes all the nerves that connect the CNS to the rest of the body. This includes peripheral nerves that carry signals to and from the CNS, autonomic ganglia that regulate involuntary functions, and spinal nerves that branch out to reach muscles and organs. Because of this distinction, the brain and spinal cord are the parts that belong to the CNS.

**7. Which neurotransmitter is associated with fast excitatory signaling in the brain?**

**A. Glutamate**

**B. GABA**

**C. Dopamine**

**D. Acetylcholine**

The fast excitatory signaling in the brain is driven mainly by glutamate. When glutamate is released into the synapse, it binds to ionotropic receptors such as AMPA, NMDA, and kainate on the postsynaptic neuron. These receptors open cation channels (primarily allowing Na<sup>+</sup> and some Ca<sup>2+</sup> to enter), producing a rapid depolarizing current that generates excitatory postsynaptic potentials. This rapid, excitatory action is what underlies most fast communication between neurons and is crucial for processes like synaptic plasticity. GABA, in contrast, is the primary fast inhibitory neurotransmitter, opening chloride channels to hyperpolarize neurons. Dopamine tends to modulate signaling over longer timescales rather than drive fast excitation. Acetylcholine can produce fast excitation in some circuits via nicotinic receptors, but glutamate is the standard transmitter associated with fast excitatory signaling throughout the brain.

**8. Which term refers to the base of the brain comprising medulla oblongata, pons, and midbrain?**

**A. Brain Stem**

**B. Spinal Cord**

**C. Cerebral Cortex**

**D. Hypothalamus**

The base of the brain is the brain stem, a stalk-like structure that connects the brain to the spinal cord and contains the medulla oblongata, pons, and midbrain. This region serves as a critical conduit for information between the brain and body and houses centers that regulate essential life-support functions such as heart rate and breathing, as well as pathways for sensory and motor signals. The medulla oblongata controls autonomic functions like respiration and circulation, the pons acts as a relay center linking various parts of the brain, and the midbrain handles aspects of movement, vision, and hearing alongside arousal. The spinal cord sits below the brain and carries signals to and from the body, but it is not the base of the brain. The cerebral cortex is the outer layer involved in higher cognitive processes, and the hypothalamus lies above the brainstem, regulating hormones and homeostasis, but neither is the base formed by medulla, pons, and midbrain.

**9. Which branch of statistics reveals differences between groups?**

- A. Inferential statistics**
- B. Descriptive statistics**
- C. Correlational analysis**
- D. Experimental design**

Detecting differences between groups is what inferential statistics focus on. This approach uses sample data to make inferences about whether observed differences reflect real differences in the larger population or are just due to random variation. By applying hypothesis testing and estimating population parameters, it answers questions like whether the average score for one group truly differs from another, and it provides a probability (p-value) or confidence interval to gauge the likelihood of that difference occurring by chance. Descriptive statistics, in contrast, simply summarize data within each group without addressing whether those differences generalize beyond the sample. Correlational analysis looks at how variables relate to each other, not whether groups differ on a given variable. Experimental design concerns how a study is structured to test hypotheses, including control and randomization, but it is a research design rather than a statistical method for identifying group differences.

**10. Small modules at the end of axons that release chemicals into the synapse are called**

- A. Terminal buttons**
- B. Dendrites**
- C. Synapses**
- D. Nodes of Ranvier**

In neural communication, the end of an axon releases chemicals into the space between neurons. The structure that does this releasing is the terminal button, also called the axon terminal or synaptic terminal. These tiny bulges hold synaptic vesicles filled with neurotransmitters. When an action potential arrives, calcium ions trigger the vesicles to fuse with the presynaptic membrane and spill neurotransmitters into the synaptic cleft, where they bind to receptors on the next cell to continue the signal. Dendrites are the parts that receive signals, not release them; synapses are the junctions between neurons; and nodes of Ranvier are gaps in the myelin sheath that help speed up electrical conduction.

## 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://comppsychneuroscience.examzify.com>**

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

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