

# IB Psychology - Biological Approach 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. Which study showed posterior hippocampus enlargement in London taxi drivers?**
  - A. O'Keefe and Nadel**
  - B. Squire**
  - C. Maguire et al. (2000)**
  - D. Rosenzweig and Bennet**
  
- 2. In humans, how many chromosomes are typically found in somatic cells?**
  - A. 23**
  - B. 24**
  - C. 84**
  - D. 46**
  
- 3. Which concept critiques strict localization by showing that some functions can shift after damage?**
  - A. Localization**
  - B. Localization criticisms**
  - C. Neuroplasticity**
  - D. Cortical remapping**
  
- 4. Sum total of all brain's neurons and the connections between them. The stronger the pathway becomes, the more likely this pathway will be activated in the future.**
  - A. Localization**
  - B. Neural network**
  - C. Neuroplasticity**
  - D. Cortical remapping**
  
- 5. Which is an effect described for cortisol (glucocorticoid)?**
  - A. Effects of Adrenaline**
  - B. Effects of Cortisol (glucocorticoid)**
  - C. Effects of Testosterone**
  - D. Effects of Thyroid hormone**

- 6. MRI stands for which term?**
- A. Magnetic Resonance Imaging**
  - B. Magnetic Radiation Imaging**
  - C. Magnetic Response Imaging**
  - D. Medical Resonance Imaging**
- 7. What is the process by which the part of one neuron establishes a connection with other neurons?**
- A. Localization**
  - B. Cortical remapping**
  - C. Dendritic branching**
  - D. Neural network**
- 8. Which molecule stores genetic information and serves as the blueprint for protein synthesis, and is located in the nucleus?**
- A. RNA**
  - B. Proteins**
  - C. DNA**
  - D. Lipids**
- 9. Which of the following statements are commonly cited as effects of testosterone?**
- A. Impacts of cortisol**
  - B. Impacts of testosterone**
  - C. Examples of hormones**
  - D. Target cells**
- 10. What is the outermost layer of the frontal lobe responsible for many executive functions?**
- A. Prefrontal Cortex**
  - B. Localization**
  - C. Broca's Area**
  - D. Amygdala**

## Answers

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

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## **Explanations**

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**1. Which study showed posterior hippocampus enlargement in London taxi drivers?**

- A. O'Keefe and Nadel
- B. Squire
- C. Maguire et al. (2000)**
- D. Rosenzweig and Bennet

Neuroplasticity in the hippocampus driven by real-world navigation experience. London taxi drivers rely intensely on spatial memory to navigate and memorize routes, so researchers scanned their brains and compared them with non-t taxi drivers. The findings showed a larger posterior hippocampus in the drivers, and importantly, the size there correlated with how many years someone had spent driving taxis. This region is linked to spatial processing and memory, so the enlargement reflects structural changes associated with the demanding navigational tasks these drivers perform. The study provided direct evidence that adult brain structure can adapt to experiential demands, illustrating hippocampal plasticity. Other figures in the field contributed foundational ideas—one proposed the hippocampus as a cognitive map, another mapped memory systems, and another demonstrated effects of enriched environments in animals—but Maguire and colleagues are the ones who demonstrated posterior hippocampal enlargement in human navigators.

**2. In humans, how many chromosomes are typically found in somatic cells?**

- A. 23
- B. 24
- C. 84
- D. 46**

Somatic cells in humans are diploid, meaning they carry two complete sets of chromosomes. This gives a total of 46 chromosomes in each somatic cell, arranged as 23 pairs. Among these, there are 22 pairs of autosomes and 1 pair of sex chromosomes (XX or XY). The gametes, in contrast, are haploid and contain 23 chromosomes. When a sperm and egg fuse during fertilization, they form a zygote with 46 chromosomes, and mitotic cell divisions in the body keep that 46-chromosome count in somatic cells.

**3. Which concept critiques strict localization by showing that some functions can shift after damage?**

- A. Localization
- B. Localization criticisms**
- C. Neuroplasticity
- D. Cortical remapping

Localization criticisms challenge the idea that each function is fixed to a single brain area. In real brains, after damage, some abilities can shift to other regions or be supported by broader networks, showing that localization isn't rigid. This illustrates neuroplasticity—the brain's capacity to reorganize itself by forming new connections—and cortical remapping, where functions move to adjacent or distant areas to compensate for loss. Because of this evidence, strict, one-to-one localization is viewed as oversimplified. For example, language functions that were once thought confined to a specific left-hemisphere region may recruit right-hemisphere areas or perilesional tissue during recovery, highlighting that the brain can adapt its functional map after injury.

**4. Sum total of all brain's neurons and the connections between them. The stronger the pathway becomes, the more likely this pathway will be activated in the future.**

- A. Localization
- B. Neural network**
- C. Neuroplasticity
- D. Cortical remapping

Think of the brain as a neural network—the whole system of neurons and the connections between them. The phrase “sum total of all brain's neurons and the connections between them” points to this network structure. When a pathway is used more, the connections along that route strengthen, so that pathway becomes more likely to fire again in the future. That idea—learning through changing connection strengths within a network—embodies how a neural network operates in the brain. While other terms touch on related ideas (specific brain areas, reorganization after injury, or the brain's general capacity to change), they don't capture the description of the brain as an interconnected system of neurons and synapses whose strengthened pathways guide future activation as directly as neural network does.

**5. Which is an effect described for cortisol (glucocorticoid)?**

- A. Effects of Adrenaline
- B. Effects of Cortisol (glucocorticoid)
- C. Effects of Testosterone
- D. Effects of Thyroid hormone**

Cortisol is a glucocorticoid, so its effects center on energy management and immune modulation during stress. It raises blood glucose by promoting gluconeogenesis in the liver and mobilizes amino acids and fatty acids to fuel cells. It also dampens inflammatory and immune responses, helping the body cope with prolonged stress. These glucocorticoid-specific actions are what the item is describing when it references cortisol. Adrenaline, testosterone, and thyroid hormone have different primary roles, so they don't match cortisol's glucocorticoid effects.

**6. MRI stands for which term?**

- A. Magnetic Resonance Imaging**
- B. Magnetic Radiation Imaging**
- C. Magnetic Response Imaging**
- D. Medical Resonance Imaging**

MRI stands for Magnetic Resonance Imaging, the term used for this imaging technique that creates detailed pictures of internal body structures. The word Magnetic points to the strong magnetic field used to align hydrogen protons. Resonance describes how those protons absorb and then emit energy at a specific frequency when stimulated by radiofrequency pulses, providing the signal that is turned into an image. Imaging indicates the outcome is a visual representation of tissues. This is distinct from options that would imply radiation or different processes, since MRI uses non-ionizing magnetic fields rather than ionizing radiation. The standard term is Magnetic Resonance Imaging.

**7. What is the process by which the part of one neuron establishes a connection with other neurons?**

- A. Localization**
- B. Cortical remapping**
- C. Dendritic branching**
- D. Neural network**

Dendritic branching reflects how a neuron grows its input surface to form connections with many other neurons. As dendrites extend and branch, they create more potential sites for synapses, allowing a single neuron to connect with multiple partners and integrate diverse signals, which is the foundation of neural circuits. The other terms describe broader brain functions or systems rather than the per-neuron process of establishing connections: localization is about mapping functions to brain regions, cortical remapping is reorganization after change or injury, and a neural network refers to the whole system of interconnected neurons rather than how one neuron forms contacts.

**8. Which molecule stores genetic information and serves as the blueprint for protein synthesis, and is located in the nucleus?**

- A. RNA**
- B. Proteins**
- C. DNA**
- D. Lipids**

DNA stores genetic information in the sequence of its nucleotides, which also serves as the blueprint for making proteins. In eukaryotic cells, this information is kept in the nucleus. When a protein is needed, the gene's instructions are transcribed into messenger RNA in the nucleus, and the mRNA carries that code to ribosomes in the cytoplasm where proteins are built. RNA plays a crucial role in the process, acting as the messenger and a component of ribosomes, but it does not house the long-term genetic code like DNA does. Proteins are the end products, not the storage of information, and lipids have no role in encoding genetic instructions. So, the molecule that both stores genetic information and directs protein synthesis, and is located in the nucleus, is DNA.

**9. Which of the following statements are commonly cited as effects of testosterone?**

- A. Impacts of cortisol**
- B. Impacts of testosterone**
- C. Examples of hormones**
- D. Target cells**

Understanding what counts as the effects of a hormone helps here. Testosterone is a hormone that produces changes in the body and behavior, so when we talk about what it does, we're referring to its impacts or effects. That's why the statement about the impacts of testosterone fits best—it directly describes the outcomes the hormone can cause, such as physical changes or behavioral tendencies. The other ideas point to different concepts: cortisol is a separate hormone with its own effects, target cells describe where hormones act rather than the results of their action, and examples of hormones are simply a category, not an outcome.

**10. What is the outermost layer of the frontal lobe responsible for many executive functions?**

- A. Prefrontal Cortex**
- B. Localization**
- C. Broca's Area**
- D. Amygdala**

Executive functions are coordinated by the prefrontal cortex, the frontmost part of the frontal lobe. This region integrates information from many brain areas to plan, organize, inhibit impulses, maintain working memory, and adapt behavior as goals change. Because of its role in guiding complex, goal-directed behavior, it's described as the part of the brain most involved in executive control. Broca's area handles language production, the amygdala processes emotion and threat, and localization is a general concept rather than a specific brain structure. So the prefrontal cortex fits the description as the outermost frontal-lobe region responsible for executive functions.

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

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

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