

**TEXAS A&M UNIVERSITY
(TAMU) BIOL 320
INTEGRATED HUMAN
ANATOMY AND PHYSIOLOGY
II LAB PRACTICAL 1 PRACTICE
TEST (SAMPLE)
STUDY GUIDE**



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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 structure is primarily involved in visual reflexes and eye movements?**
 - A. Superior colliculi
 - B. Inferior colliculi
 - C. Substantia nigra
 - D. Red nucleus
- 2. Psychophysiology is defined as which of the following?**
 - A. The study of how the brain processes emotions.
 - B. How the body reacts to psychological processes.
 - C. The study of physical exercise effects on mental health.
 - D. The analysis of ergonomic responses to stress.
- 3. What is the function of glial cells?**
 - A. Support, protect, and maintain nerve tissue
 - B. Transmit electrical impulses along axons
 - C. Receive sensory input from the body
 - D. Generate action potentials
- 4. Which structure connects the hypothalamus to the pituitary via the infundibulum?**
 - A. Thalamus
 - B. Epithalamus
 - C. Fornix
 - D. Hypothalamus
- 5. Cones detect color, whereas rods detect _____.**
 - A. Brightness
 - B. Contrast
 - C. Motion
 - D. Color

- 6. What are the 3 main functions of the nervous system?**
- A. Sensory input, Sensory integration, and Motor output
 - B. Hormone release, Homeostatic regulation, and Reflex arcs
 - C. Memory formation, Language processing, and Skill learning
 - D. Electrical conduction, Chemical signaling, and Immune modulation
- 7. Which statement about the parasympathetic nervous system is true?**
- A. It prepares the body for action and stress
 - B. It accelerates heart rate and dilates pupils
 - C. It coordinates rapid muscular responses
 - D. It performs housekeeping and energy conservation
- 8. The pineal gland is located in which brain region?**
- A. Thalamus
 - B. Epithalamus
 - C. Hypothalamus
 - D. Midbrain
- 9. Which tunic is primarily composed of collagen?**
- A. Tunica intima
 - B. Tunica media
 - C. Tunica adventitia
 - D. Tunica externa
- 10. Efferent impulses are also known as __ impulses.**
- A. Sensory
 - B. Motor
 - C. Afferent
 - D. Integrative

Answers

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

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Explanations

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1. Which structure is primarily involved in visual reflexes and eye movements?

- A. Superior colliculi**
- B. Inferior colliculi
- C. Substantia nigra
- D. Red nucleus

Visual reflexes and eye movements are guided by the superior colliculus, a midbrain structure that receives rapid visual input from the retina and translates it into orienting responses. It helps generate quick eye shifts (saccades) toward new visual stimuli and coordinates those eye movements with head movements by sending commands to brainstem gaze centers. The inferior colliculi handle auditory processing and reflexes to sound, not vision. The substantia nigra is a dopaminergic center involved in initiating and modulating movement within basal ganglia circuits. The red nucleus contributes to motor coordination, especially of limbs, through the rubrospinal tract. Thus, the superior colliculus stands out as the key structure for visual reflexes and eye movements.

2. Psychophysiology is defined as which of the following?

- A. The study of how the brain processes emotions.
- B. How the body reacts to psychological processes.**
- C. The study of physical exercise effects on mental health.
- D. The analysis of ergonomic responses to stress.

Psychophysiology explores how the body's physiological systems reflect and respond to mental processes. It focuses on how the body reacts to psychological events—measuring signals like heart rate, skin conductance, respiration, pupil dynamics, and even brain activity as someone experiences thoughts, emotions, or stress. This approach links mind and body, using these bodily responses as indices of psychological states. For example, fear or anxiety often triggers faster heart rate and increased skin conductance due to sympathetic arousal. The other options describe narrower areas—brain-centric emotion processing, effects of exercise on mood, or ergonomic/workplace stress topics—rather than the broader link between psychological processes and bodily physiology.

3. What is the function of glial cells?

- A. Support, protect, and maintain nerve tissue**
- B. Transmit electrical impulses along axons
- C. Receive sensory input from the body
- D. Generate action potentials

Glial cells act as the support system for nervous tissue. They provide structural support, nourish neurons, regulate the extracellular environment, and help protect and repair the nervous system. Some glia form myelin around axons, which speeds up signal conduction, while others handle immune defense and cleanup after injury. These roles focus on maintaining and protecting neural tissue, not on transmitting signals themselves. Transmitting electrical impulses along axons, receiving sensory input, and generating action potentials are functions of neurons, not glial cells.

4. Which structure connects the hypothalamus to the pituitary via the infundibulum?

- A. Thalamus
- B. Epithalamus
- C. Fornix

D. Hypothalamus

The link from the brain's control center to the pituitary is the hypothalamus, connected to the pituitary by the infundibulum, the slender pituitary stalk. This infundibulum carries two important routes: neurosecretory axons from hypothalamic neurons extend down to the posterior pituitary to release hormones like vasopressin and oxytocin directly into blood vessels, and a network of releasing and inhibiting hormones travels through the hypothalamic-hypophyseal portal system to regulate the anterior pituitary's hormone production (TSH, ACTH, growth hormone, and more). The other structures listed aren't the links to the pituitary: the thalamus and epithalamus are distinct diencephalic regions, and the fornix is a limbic tract linking the hippocampus to other limbic areas.

5. Cones detect color, whereas rods detect ____.

- A. Brightness
- B. Contrast**
- C. Motion
- D. Color

Rods mediate vision in dim light by signaling how much light is present, not color. They're highly sensitive to light intensity and provide grayscale vision with high sensitivity but low detail, which is why they're linked to brightness rather than color. Cones, active in brighter conditions, detect different wavelengths to produce color and sharp detail. So the function that best fits rods is sensing brightness.

6. What are the 3 main functions of the nervous system?

- A. Sensory input, Sensory integration, and Motor output**
- B. Hormone release, Homeostatic regulation, and Reflex arcs
- C. Memory formation, Language processing, and Skill learning
- D. Electrical conduction, Chemical signaling, and Immune modulation

The nervous system's job is to sense the body and environment, interpret those signals, and produce an appropriate response. Sensory input means receptors detect stimuli—like touch, sound, light, or internal states such as blood pressure—and send information to the brain and spinal cord. Sensory integration is the processing step in the central nervous system where that information is interpreted, compared with past experiences, and a decision is made about what to do. Motor output is the command issued from the nervous system to effectors—muscles or glands—so movement, secretion, or other actions can occur. While other processes touch on related ideas (hormone release, maintaining balance, reflexes, memory, language, signaling methods), they don't represent the overarching trio of sensing, processing, and acting that defines the main functions of the nervous system.

7. Which statement about the parasympathetic nervous system is true?

- A. It prepares the body for action and stress
- B. It accelerates heart rate and dilates pupils
- C. It coordinates rapid muscular responses
- D. It performs housekeeping and energy conservation**

The parasympathetic nervous system promotes rest-and-digest activities that conserve energy and support routine maintenance of the body. It shifts functions toward energy storage and bodily upkeep, such as slowing the heart rate, constricting the pupils, and stimulating digestion and saliva. In this way, it helps the body recover from activity and maintain daily housekeeping functions like digestion and nutrient absorption. The statements about preparing the body for action and stress, or about speeding the heart and dilating pupils, describe sympathetic responses, which drive arousal and readiness for action. The idea of coordinating rapid muscular responses also aligns more with motor pathways or the sympathetic fight-or-flight state. Therefore, the description that fits the parasympathetic role is the one about housekeeping and energy conservation.

8. The pineal gland is located in which brain region?

- A. Thalamus
- B. Epithalamus**
- C. Hypothalamus
- D. Midbrain

Understanding where the pineal gland sits within the brain's diencephalon helps pinpoint its location. It belongs to the epithalamus, a small region at the dorsal/top part of the diencephalon that forms part of the roof of the third ventricle. This places the pineal gland just posterior to the thalamus and above the midbrain. The thalamus is a large relay structure surrounding the third ventricle, while the hypothalamus lies below it as part of the floor of the third ventricle. So, the pineal gland is located in the epithalamus.

9. Which tunic is primarily composed of collagen?

- A. Tunica intima**
- B. Tunica media
- C. Tunica adventitia
- D. Tunica externa

The layer that is primarily collagen-rich is the outermost tunic. It consists mainly of dense connective tissue filled with collagen fibers, which give the vessel wall tensile strength and help anchor the vessel to surrounding tissues. This layer is called the tunica adventitia, or tunica externa. It also houses small vessels and nerves (vasa vasorum and nervi vasorum) in larger vessels. The other tunics are structured differently: the inner tunic (endothelium with a basement membrane and subendothelial layer) is not collagen-dense, and the middle tunic is mainly smooth muscle with elastic fibers.

10. Efferent impulses are also known as __ impulses.

- A. Sensory
- B. Motor**
- C. Afferent
- D. Integrative

Efferent impulses are signals that exit the central nervous system to reach muscles or glands, so they are motor impulses. They carry the brain's or spinal cord's commands to effectors to produce movement or glandular activity. For example, deciding to move a finger sends motor impulses from the CNS to skeletal muscles. Sensory or afferent impulses travel from receptors toward the CNS, conveying information about the body or environment. Integrative impulses refer to processing within the CNS by interneurons.

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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://tamu-biol320labpractical1.examzify.com>

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

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