

# Galen Anatomy and Physiology (A&P) 1 Theory Exam 2 Practice (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 glial cell in the peripheral nervous system forms the myelin sheath around peripheral neurons?**
  - A. Astrocytes**
  - B. Schwann cells**
  - C. Oligodendrocytes**
  - D. Microglia**
  
- 2. Which events characterize the proliferation phase?**
  - A. Deeper part of clot disappears; number of capillaries decline**
  - B. Mast cells released; a blood clot forms**
  - C. Scabs form and basal cells migrate**
  - D. Scab is shed and scar tissue elevates epidermis**
  
- 3. Exocytosis is best described as**
  - A. A process that brings substances into the cell**
  - B. A process that modifies organelles**
  - C. A process that metabolizes nutrients**
  - D. A process that makes substances leave the cell**
  
- 4. How many types of tissue are described as primary?**
  - A. Four types: Epithelial, Connective, Muscle, Nervous**
  - B. Three types**
  - C. Five types**
  - D. Four types: Epithelial, Connective, Muscle, Nervous**
  
- 5. How many types of neural cells are described?**
  - A. Three**
  - B. Two**
  - C. One**
  - D. Four**
  
- 6. Rough Endoplasmic Reticulum functions include which of the following?**
  - A. Lipid storage only**
  - B. Energy production**
  - C. DNA replication**
  - D. Synthesis, storage, transport, detoxification**

- 7. Which of the following is a type of protein found in the cell membrane?**
- A. Actin filaments**
  - B. Transmembrane proteins**
  - C. Collagen fibers**
  - D. Myosin**
- 8. Exposure to UV light in the skin leads to the production of which vitamin D form?**
- A. Vitamin D2**
  - B. Calcitriol**
  - C. Vitamin D3**
  - D. Vitamin D1**
- 9. Simple cuboidal tissue is found in which structures?**
- A. Lining of blood vessels**
  - B. Digestive tract lining**
  - C. Kidney tubules and thyroid gland**
  - D. Skin epidermis**
- 10. Which CNS cell lines brain ventricles and spinal canal?**
- A. Astrocytes**
  - B. Oligodendrocytes**
  - C. Ependymal cells**
  - D. Microglia**

## Answers

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

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## **Explanations**

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**1. Which glial cell in the peripheral nervous system forms the myelin sheath around peripheral neurons?**

- A. Astrocytes
- B. Schwann cells**
- C. Oligodendrocytes
- D. Microglia

In the peripheral nervous system, insulation of axons to speed signals is provided by glial cells called Schwann cells. They wrap around a segment of the axon and lay down myelin, forming a myelin sheath that speeds conduction via saltatory conduction. Each Schwann cell myelinates a portion of a single axon, with gaps between segments known as nodes of Ranvier where the nerve impulse can jump along the fiber. Other glial cells have different roles or locations: astrocytes support neurons and the blood-brain barrier, oligodendrocytes myelinate axons in the central nervous system, and microglia act as immune cells in the CNS. Therefore, the glial cell that forms the myelin sheath around peripheral neurons is the Schwann cell.

**2. Which events characterize the proliferation phase?**

- A. Deeper part of clot disappears; number of capillaries decline**
- B. Mast cells released; a blood clot forms
- C. Scabs form and basal cells migrate
- D. Scab is shed and scar tissue elevates epidermis

Proliferation is the phase where the wound is rebuilt with new tissue: granulation tissue forms with new capillaries (angiogenesis), fibroblasts lay down collagen and extracellular matrix, and epithelial cells from the wound edges begin to migrate over the surface (re-epithelialization). A scab can still be present as the initial clot is gradually replaced by this new tissue. The choice that describes scabs forming and basal (epithelial) cells migrating best fits these proliferative processes, since basal cell migration is the key step in re-epithelializing the wound. The other options describe events more typical of inflammation (clot formation and mast cell activity) or remodeling (scab shedding and epidermal elevation by scar tissue), which are not the defining activities of the proliferative phase.

**3. Exocytosis is best described as**

- A. A process that brings substances into the cell
- B. A process that modifies organelles
- C. A process that metabolizes nutrients
- D. A process that makes substances leave the cell**

Exocytosis is the process by which secretory vesicles inside the cell fuse with the plasma membrane to release their contents into the extracellular space. This is how cells export substances such as neurotransmitters, hormones, or digestive enzymes. The vesicles are transported to the membrane, docking and fusion occur (often with help from proteins like SNAREs), and the vesicle membrane becomes part of the plasma membrane while the vesicle's cargo is released outside the cell. This process also helps renew and expand the cell's plasma membrane by recapturing vesicle membrane after fusion. Energy from ATP and cytoskeletal movement drives vesicles to the membrane and mediates fusion. Exocytosis is not about bringing substances into the cell, modifying organelles, or metabolizing nutrients; it is specifically the mechanism that makes substances leave the cell.

#### 4. How many types of tissue are described as primary?

- A. Four types: Epithelial, Connective, Muscle, Nervous
- B. Three types
- C. Five types
- D. Four types: Epithelial, Connective, Muscle, Nervous**

There are four primary tissue types in standard anatomy. These are epithelial, connective, muscle, and nervous tissue. This classification captures the fundamental building blocks from which all other tissues and organs are formed. Each type has a distinct role: epithelial tissue lines surfaces and forms glands, connective tissue provides support and fills spaces, muscle tissue contracts to produce movement, and nervous tissue transmits signals and coordinates body activities. Because the question asks for how many primary tissue types exist, the correct answer is four, and it should list the four categories above. Options claiming three or five types don't fit this widely used framework, and while there are many subtypes within each tissue type, the four-primary-tissue classification remains the standard.

#### 5. How many types of neural cells are described?

- A. Three
- B. Two**
- C. One
- D. Four

Neural tissue is described as having two broad kinds of cells: neurons and glial cells. Neurons are the signaling units that generate and transmit electrical impulses and communicate at synapses. Glial cells support neurons in many ways, including supplying nutrients, maintaining the extracellular environment, and providing insulation (myelin) around axons. In introductory material, these two categories capture the main cellular players in the nervous system, even though many subtypes exist within each group. That's why the count described is two.

#### 6. Rough Endoplasmic Reticulum functions include which of the following?

- A. Lipid storage only
- B. Energy production
- C. DNA replication
- D. Synthesis, storage, transport, detoxification**

The rough endoplasmic reticulum is defined by its ribosome-studded surface, which anchors the site of protein synthesis. The main role here is producing polypeptides that will be secreted, become part of a membrane, or be delivered to lysosomes. As these new proteins are synthesized, they enter the ER lumen where they fold and may receive initial modifications. The ER then packages these proteins into transport vesicles that ferry them toward the Golgi apparatus for further processing and sorting. Proteins can also be stored briefly in the ER lumen before they're needed, contributing to its storage function. Detoxification elements are linked to the ER as well, since some detoxification processes involve enzymes associated with this organelle, especially in cells focused on metabolizing compounds. In sum, synthesis of proteins, their storage and trafficking, and related processing—and some detox roles—best describe the rough ER's functions.

**7. Which of the following is a type of protein found in the cell membrane?**

- A. Actin filaments**
- B. Transmembrane proteins**
- C. Collagen fibers**
- D. Myosin**

Proteins that reside in the cell membrane and actually span the lipid bilayer are transmembrane proteins. They thread through the membrane, with hydrophobic regions that interact with the fatty acid core and hydrophilic parts that face the interior and exterior of the cell. This positioning lets them perform key membrane roles such as forming channels, acting as transporters, serving as receptors, or anchoring the membrane to the cytoskeleton. Actin filaments are part of the cytoskeleton inside the cell and help with shape and movement. Collagen fibers are extracellular matrix proteins outside the cell that provide structural support. Myosin is a motor protein that interacts with actin to generate force, typically not embedded across the membrane. Explaining the organization helps connect why transmembrane proteins are the ones found spanning the membrane.

**8. Exposure to UV light in the skin leads to the production of which vitamin D form?**

- A. Vitamin D2**
- B. Calcitriol**
- C. Vitamin D3**
- D. Vitamin D1**

UVB exposure in the skin triggers a chemical change in 7-dehydrocholesterol, converting it into pre-vitamin D3, which then becomes vitamin D3 (cholecalciferol). This is the form that the skin actually synthesizes in response to sunlight. From there, vitamin D3 is transported to the liver for hydroxylation to calcidiol and then to the kidney to form the active calcitriol, but the initial product created by UV light is vitamin D3 itself. The other forms aren't produced directly by UV exposure in the skin: vitamin D2 comes from plant sources, calcitriol is the active hormone produced after metabolic processing, and vitamin D1 isn't a standalone vitamin D form produced by the skin.

## 9. Simple cuboidal tissue is found in which structures?

- A. Lining of blood vessels
- B. Digestive tract lining
- C. Kidney tubules and thyroid gland**
- D. Skin epidermis

Simple cuboidal epithelium is a single layer of cube-shaped cells that is well suited for secretion and absorption. In the kidneys, the tubules are lined by this type of epithelium to actively reabsorb water, ions, and nutrients from the filtrate, with microvilli in places to increase surface area for uptake. In the thyroid gland, the follicles are surrounded by simple cuboidal cells that synthesize and secrete thyroid hormones into the colloid and onward to the bloodstream. Lining of blood vessels is made of simple squamous endothelium, which is a flat, thin single layer, not cuboidal; the digestive tract is lined by simple columnar epithelium specialized for absorption and secretion; and the skin epidermis is stratified squamous, offering protection. Therefore, structures that feature simple cuboidal epithelium include kidney tubules and the thyroid gland.

## 10. Which CNS cell lines brain ventricles and spinal canal?

- A. Astrocytes
- B. Oligodendrocytes
- C. Ependymal cells**
- D. Microglia

Ependymal cells line the brain ventricles and the spinal cord's central canal. They form the epithelial interface of the ventricular system and help produce and circulate cerebrospinal fluid, often with motile cilia to move CSF through the cavities. Astrocytes mainly provide support and contribute to the blood-brain barrier; oligodendrocytes create myelin around CNS axons; microglia act as resident immune cells. Because only ependymal cells specifically line those CSF-filled cavities, they are the cells described.

## 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://galenaandp1theory2.examzify.com>**

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

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