

ECPI ANATOMY AND PHYSIOLOGY (A&P) EXAM 1 PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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. Involuntary muscle found only in the heart.**
 - A. Skeletal muscle
 - B. Aponeurosis
 - C. Smooth muscle
 - D. Cardiac muscle
- 2. The arm (shoulder to elbow) corresponds to which region?**
 - A. Brachial region
 - B. Antebrachial region
 - C. Axillary region
 - D. Humeral region
- 3. A muscle attached to the bones of the skeleton and provides the force that moves the bones.**
 - A. Cardiac muscle
 - B. Skeletal muscle
 - C. Smooth muscle
 - D. Myocyte
- 4. Which hormone stimulates the kidney to retain sodium ions and water?**
 - A. Aldosterone
 - B. Antidiuretic hormone
 - C. Parathyroid hormone
 - D. Calcitonin
- 5. Which pancreatic hormone raises blood glucose levels and acts as an antagonist to insulin?**
 - A. Insulin
 - B. Glucagon
 - C. Somatostatin
 - D. Pancreatic polypeptide

6. Which clear tissue covers the front of the eye?

- A. Retina
- B. Cornea
- C. Iris
- D. Sclera

7. What is the matrix composed of?

- A. Fibrous proteins and ground substance
- B. Nucleic acids and minerals
- C. Water and electrolytes
- D. Carbohydrates and lipids

8. What is the middle, vascular layer of the eye located between the retina and the sclera?

- A. Choroid
- B. Sclera
- C. Retina
- D. Lens

9. Where is DNA primarily located in a typical cell?

- A. Nucleus
- B. Cytoplasm
- C. Mitochondrion
- D. Nucleolus

10. Which protein covers the myosin binding sites on actin?

- A. Actin
- B. Tropomyosin
- C. Myosin
- D. Troponin

Answers

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

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Explanations

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1. Involuntary muscle found only in the heart.

- A. Skeletal muscle
- B. Aponeurosis
- C. Smooth muscle
- D. Cardiac muscle**

Cardiac muscle is the involuntary muscle found only in the heart. It looks striated like skeletal muscle, but its contractions occur automatically thanks to the heart's own conduction system, so you don't control it consciously. Cardiac muscle cells are branched and tightly connected by intercalated discs that contain gap junctions and desmosomes, enabling ions to pass quickly between cells and producing a synchronized heartbeat. This unique arrangement lets the heart pump blood continuously. The other options don't fit: skeletal muscle is voluntary and attached to bones; smooth muscle is involuntary but lines hollow organs and vessels, not the heart; an aponeurosis is a flat sheet of connective tissue, not muscle tissue.

2. The arm (shoulder to elbow) corresponds to which region?

- A. Brachial region**
- B. Antebrachial region
- C. Axillary region
- D. Humeral region

In anatomical regional terms, the upper limb is divided into the brachial region for the upper arm (from shoulder to elbow), the antebrachial region for the forearm (elbow to wrist), and the axillary region for the armpit. The term brachial comes from brachium, meaning the upper arm, so the segment from the shoulder to the elbow is the brachial region. The forearm is the antebrachial region, the armpit is the axillary region, and although related to the humerus bone, there isn't a standard "humeral region" used for that portion.

3. A muscle attached to the bones of the skeleton and provides the force that moves the bones.

- A. Cardiac muscle
- B. Skeletal muscle**
- C. Smooth muscle
- D. Myocyte

Skeletal muscle does the job of moving the bones. It attaches to bones (usually via tendons) and, when it contracts, it pulls on the bone to produce movement at the joints. This type of muscle is under voluntary control and has a striated, multinucleated structure organized into sarcomeres that generate force through the sliding filament mechanism. In contrast, cardiac muscle is found only in the heart and pumps blood; smooth muscle lines hollow organs and blood vessels and moves substances along without voluntary control. A myocyte is simply a muscle cell, and skeletal muscle is made up of many of these cells, but the tissue that moves the skeleton is specifically skeletal muscle.

4. Which hormone stimulates the kidney to retain sodium ions and water?

- A. Aldosterone
- B. Antidiuretic hormone
- C. Parathyroid hormone
- D. Calcitonin

A hormone that controls how much sodium is reabsorbed by the kidney also controls how much water is retained. Aldosterone acts on the distal tubules and collecting ducts to increase the reabsorption of sodium. It does this by upregulating sodium channels (ENaC) on the apical membrane and Na⁺/K⁺-ATPase pumps on the basolateral membrane, which moves Na⁺ back into the blood. As sodium is reabsorbed, water follows osmotically, so this hormone directly promotes water retention as well, increasing blood volume and pressure. This regulatory system is part of the renin–angiotensin–aldosterone pathway: low blood pressure or low blood volume triggers renin release, which leads to angiotensin II formation and stimulates aldosterone release. While antidiuretic hormone also helps the body retain water, it does so by increasing water reabsorption in the collecting ducts rather than directly promoting sodium reabsorption. Parathyroid hormone and calcitonin regulate calcium balance, not sodium and water reabsorption in the kidney.

5. Which pancreatic hormone raises blood glucose levels and acts as an antagonist to insulin?

- A. Insulin
- B. Glucagon
- C. Somatostatin
- D. Pancreatic polypeptide

Glucagon is the pancreatic hormone that raises blood glucose and counteracts insulin. It's produced by the alpha cells of the pancreatic islets and released when blood sugar is low. In the liver, glucagon binds its receptor and triggers a cAMP-based signaling cascade that activates glycogenolysis (breaking down glycogen) and promotes gluconeogenesis (making new glucose). The net effect is more glucose released into the bloodstream, which raises blood glucose levels during fasting or between meals. Insulin does the opposite—promotes glucose uptake and storage to lower blood sugar. Other options don't primarily raise glucose or oppose insulin: somatostatin inhibits the release of multiple hormones, including insulin and glucagon; pancreatic polypeptide mainly influences pancreatic secretions and GI activity.

6. Which clear tissue covers the front of the eye?

- A. Retina
- B. Cornea
- C. Iris
- D. Sclera

The front of the eye is covered by a clear, transparent tissue that lets light through and begins focusing it as it enters. This is the cornea. Its transparency and curved shape are essential for allowing light to pass into the eye and for starting the process of focusing. The retina is the light-sensitive tissue at the back of the eye, not at the front; the iris is the colored part that controls how much light enters by adjusting the pupil size; and the sclera is the tough, white outer layer that protects the eye. The cornea is the only front-facing tissue that is clear, making it the window through which light first enters the eye.

7. What is the matrix composed of?

A. Fibrous proteins and ground substance

B. Nucleic acids and minerals

C. Water and electrolytes

D. Carbohydrates and lipids

Think about what makes up the extracellular framework that surrounds cells in connective tissue. The matrix is built from two main parts: fibrous proteins and ground substance. The fibrous proteins, especially collagen, provide strength and structure, while elastin and reticular fibers add elasticity and support. The ground substance is a gel-like material rich in proteoglycans, glycosaminoglycans, and glycoproteins that fills spaces, cushions tissues, and allows nutrients and signals to diffuse to cells. Water and electrolytes are present within this space and support its function, but they don't define the matrix itself. Nucleic acids and minerals, or carbohydrates and lipids, don't describe the ECM's fundamental composition. So the combination of fibrous proteins and ground substance best describes the matrix.

8. What is the middle, vascular layer of the eye located between the retina and the sclera?

A. Choroid

B. Sclera

C. Retina

D. Lens

The middle, vascular layer of the eye between the retina and the sclera is the choroid. It's part of the uveal tract along with the iris and ciliary body and is rich in blood vessels that supply the outer retina, including the photoreceptors. The choroid's vascular network (the choriocapillaris) delivers oxygen and nutrients to the retinal layers, while its pigment helps absorb stray light to reduce scatter. In contrast, the sclera is the tough outer coat, the retina is the inner neural layer, and the lens is a transparent, avascular structure behind the pupil.

9. Where is DNA primarily located in a typical cell?

A. Nucleus

B. Cytoplasm

C. Mitochondrion

D. Nucleolus

DNA is primarily located in the nucleus. The nucleus houses chromosomes that contain most of the cell's genetic material, organized and protected by the nuclear envelope to regulate gene expression and DNA replication. There is DNA elsewhere, such as in mitochondria, but that mitochondrial DNA is a small portion of the total genome. The nucleolus sits inside the nucleus as a site for ribosomal RNA synthesis and ribosome assembly, not as the main repository of the genome. The cytoplasm contains little to no DNA, so it's not the primary location for genetic material.

10. Which protein covers the myosin binding sites on actin?

- A. Actin
- B. Tropomyosin**
- C. Myosin
- D. Troponin

Tropomyosin blocks the myosin-binding sites on actin in relaxed muscle. It runs along the grooves of the actin filament, covering those sites so myosin heads can't attach. When calcium levels rise, the troponin complex binds calcium and shifts tropomyosin away from the binding sites, exposing them for cross-bridge formation and contraction. Actin is the filament itself, not the covering; myosin is the motor protein that would bind if the sites are exposed; troponin regulates the position of tropomyosin in response to calcium.

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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://ecpiaandp.examzify.com>

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

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