

ANATOMY AND PHYSIOLOGY CFE PRACTICE EXAM (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. Which structure becomes cloudy in cataracts?**
 - A. Cornea
 - B. Iris
 - C. Lens
 - D. Retina
- 2. During vasoconstriction, what happens to the lumen?**
 - A. Increased size of the lumen
 - B. Decreased size of the lumen
 - C. Increased viscosity of the blood
 - D. Increased blood flow
- 3. Which structure does an action potential travel along?**
 - A. Dendrite
 - B. Cell body
 - C. Axon
 - D. Nucleus
- 4. Sight relies on which type of receptors?**
 - A. Photoreceptors
 - B. Mechanoreceptors
 - C. Nociceptors
 - D. Chemoreceptors
- 5. Which bone marrow type is found in the diaphysis and stores fat?**
 - A. Red Bone Marrow
 - B. Yellow Bone Marrow
 - C. Cartilage
 - D. Tendon
- 6. Which type of fats is described as healthy?**
 - A. Saturated fats
 - B. Trans fats
 - C. Unsaturated fats
 - D. Cholesterol

- 7. Red bone marrow is found in the epiphysis and is responsible for producing blood cells.**
- A. Yellow Bone Marrow
 - B. Epiphysis
 - C. Diaphysis
 - D. Red Bone Marrow
- 8. Which spinal region contains neurons for bladder and reproductive functions?**
- A. Cervical
 - B. Thoracic
 - C. Lumbar
 - D. Sacral
- 9. Which filament forms the thick filaments in a sarcomere?**
- A. Actin
 - B. Titin
 - C. Nebulin
 - D. Myosin
- 10. Which structure forms the white, protective outer layer of the eye?**
- A. Sclera
 - B. Retina
 - C. Iris
 - D. Pupil

Answers

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

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Explanations

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1. Which structure becomes cloudy in cataracts?

- A. Cornea
- B. Iris
- C. Lens**
- D. Retina

Cataracts cause cloudiness of the lens. The lens is normally transparent, which allows light to pass through with minimal scattering so images can be focused on the retina. Its clarity depends on tightly packed crystallin proteins and the orderly arrangement of lens fibers. With aging or other stressors, these proteins denature and aggregate, and the lens fibers become disrupted, causing light to scatter and form opacities. This clouding reduces vision because the eye can't transmit a clear image to the retina. The cornea, iris, and retina don't develop the characteristic lens opacities seen in cataracts; clouding there would reflect other eye conditions (corneal edema or disease, iris changes, or retinal pathology).

2. During vasoconstriction, what happens to the lumen?

- A. Increased size of the lumen
- B. Decreased size of the lumen**
- C. Increased viscosity of the blood
- D. Increased blood flow

When arterioles constrict, the smooth muscle in their walls contracts, making the interior opening (the lumen) smaller. This narrowing increases resistance to blood flow, so flow through that vessel tends to decrease unless the driving pressure rises. Blood viscosity isn't changed by this process, and vasoconstriction doesn't increase overall flow. So the lumen size decreases.

3. Which structure does an action potential travel along?

- A. Dendrite
- B. Cell body
- C. Axon**
- D. Nucleus

The action potential travels along the axon. The axon is the long, specialized conduit that transmits electrical signals away from the cell body to synaptic terminals. When a neuron fires, depolarization at the axon initial segment reaches threshold and an all-or-none spike is generated that propagates along the length of the axon as voltage-gated channels open sequentially. In myelinated fibers, this propagation speeds up through saltatory conduction, with the impulse leaping between gaps called nodes of Ranvier. Dendrites and the cell body are primarily for receiving and integrating inputs; they experience local, graded potentials that diminish with distance and generally do not support reliable long-distance propagation like the axon does. The nucleus houses genetic material and does not participate in electrical signaling.

4. Sight relies on which type of receptors?

- A. Photoreceptors
- B. Mechanoreceptors
- C. Nociceptors
- D. Chemoreceptors

Detecting light is carried out by photoreceptors in the retina. These specialized cells, rods and cones, transduce light photons into neural signals that the brain can interpret. In darkness they release a steady amount of neurotransmitter; when light arrives, a biochemical cascade reduces the release by causing hyperpolarization of the photoreceptor. This change is then processed by bipolar and ganglion cells, with signals traveling via the optic nerve to the visual cortex for image formation. Rods are highly sensitive and color-insensitive, helping with night vision, while cones require brighter light and provide color vision and fine detail. The other receptor types—mechanoreceptors for touch and hearing, nociceptors for pain, and chemoreceptors for chemicals—serve different senses and are not primarily involved in vision.

5. Which bone marrow type is found in the diaphysis and stores fat?

- A. Red Bone Marrow
- B. Yellow Bone Marrow
- C. Cartilage
- D. Tendon

Long bones have distinct marrow compartments with different roles. The diaphysis—the shaft of the bone—houses the medullary cavity filled in adults by yellow bone marrow, which is rich in adipocytes and serves as a fat storage reserve. Red bone marrow, responsible for making blood cells, is located in the epiphyses and other cancellous regions where hematopoiesis occurs, and its activity is higher in children. Cartilage and tendons aren't marrow tissue. So the substance stored in the diaphysis is fat stored in yellow marrow.

6. Which type of fats is described as healthy?

- A. Saturated fats
- B. Trans fats
- C. Unsaturated fats
- D. Cholesterol

Healthy fats are those with double bonds in their fatty acids—unsaturated fats. These kinked chains keep the fats liquid at room temperature and tend to improve blood cholesterol profiles, primarily by lowering LDL cholesterol when they replace saturated and trans fats in the diet. They come in two main types: monounsaturated fats (olive oil, avocados, many nuts) and polyunsaturated fats (fatty fish, seeds, most vegetable oils). In contrast, saturated fats have no double bonds, are often solid at room temperature, and can raise LDL cholesterol; trans fats, created by hydrogenation, raise LDL and lower the protective HDL, making them particularly harmful. Cholesterol isn't a fat, but a lipid molecule; its dietary impact varies and isn't described as a healthy fat type. So, the healthy type described is unsaturated fats.

7. Red bone marrow is found in the epiphysis and is responsible for producing blood cells.

- A. Yellow Bone Marrow
- B. Epiphysis
- C. Diaphysis
- D. Red Bone Marrow**

Hematopoiesis, the production of blood cells, occurs in red bone marrow. This tissue is rich in hematopoietic stem cells that differentiate into red blood cells, white blood cells, and platelets. In long bones, red marrow is found in the epiphyses—the ends of the bone—and also in certain flat bones, making it the specific tissue responsible for blood cell formation. Yellow marrow is primarily fat storage and does not actively produce blood cells. The epiphysis is a bone region where red marrow is located, not a type of marrow itself, and the diaphysis is the shaft of the bone, which mostly contains yellow marrow in adults. Therefore, the term that best fits both the location and function described is red bone marrow.

8. Which spinal region contains neurons for bladder and reproductive functions?

- A. Cervical
- B. Thoracic
- C. Lumbar
- D. Sacral**

The sacral region. Pelvic organ control, especially bladder emptying and many reproductive functions, relies on parasympathetic neurons that originate in the sacral spinal cord (S2–S4) and travel via the pelvic splanchnic nerves to the bladder and reproductive tissues. Activation of these sacral parasympathetic pathways stimulates the detrusor muscle to contract for voiding and supports erectile function in the pelvic organs. The somatic control of the external urethral sphincter also comes from S2–S4 via the pudendal nerve, further tying pelvic function to the sacral region. While sympathetic input from higher (lumbar) levels helps with urine storage, the key neural control for bladder and reproductive functions comes from the sacral segments. Cervical and thoracic regions don't provide the main innervation to these pelvic structures.

9. Which filament forms the thick filaments in a sarcomere?

- A. Actin
- B. Titin
- C. Nebulin
- D. Myosin**

Thick filaments are formed by myosin. In a sarcomere, myosin molecules assemble into long, rod-like thick filaments with globular heads that protrude outward. These heads bind to the actin molecules of the thin filaments and, using energy from ATP hydrolysis, pull the actin filaments toward the center of the sarcomere to generate contraction. The other proteins play different roles: actin makes up the thin filament; nebulin helps set and stabilize thin filament length; and titin is a huge elastic protein that spans from the Z-disc to the M-line, supporting sarcomere structure and aligning thick filaments. Because the question asks which filament forms the thick filaments, myosin is the correct choice.

10. Which structure forms the white, protective outer layer of the eye?

A. Sclera

B. Retina

C. Iris

D. Pupil

The outer protective layer of the eye is the sclera. This is the tough, opaque fibrous coat that forms the white part of the eye and encloses most of the eyeball, giving it shape and shielding the delicate inner structures from injury. It blends with the clear cornea at the front and with the optic nerve at the back, providing a strong, protective barrier while still allowing the eye to maintain its overall form. The sclera is rich in collagen, making it durable, and it also serves as the attachment point for the extraocular muscles that move the eye. For context, the retina is the light-sensitive inner layer at the back of the eye, the iris is the colored ring around the pupil that regulates light entry, and the pupil is the opening in the iris.

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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://anatomyphysiocfe.examzify.com>

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

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