

TEXAS A&M UNIVERSITY (TAMU) BIOL 319 INTEGRATED HUMAN ANATOMY AND PHYSIOLOGY I LAB PRACTICAL 1 PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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 of the following is an origin of the deltoid?**
 - A. Lateral 3rd of clavicle
 - B. Medial epicondyle of humerus
 - C. Olecranon
 - D. Coronoid process of ulna
- 2. The flexor pollicis brevis inserts on which aspect of the proximal phalanx?**
 - A. Lateral side of base of proximal phalanx of thumb
 - B. Anterior side of the 1st metacarpal
 - C. Base of 5th metacarpal
 - D. Distal phalanx of thumb
- 3. Goblet cells secrete mucus that coats the free surface of which tissue?**
 - A. Connective tissue
 - B. Muscle tissue
 - C. Nervous tissue
 - D. Simple epithelial cells
- 4. Which muscle primarily extends the arm at the shoulder?**
 - A. Latissimus dorsi
 - B. Pectoralis major
 - C. External oblique
 - D. Brachioradialis
- 5. Which of the following is NOT a type of cartilage?**
 - A. Areolar
 - B. Hyaline
 - C. Elastic
 - D. Fibrocartilage
- 6. Osteocytes are derived from which cell type and are involved in what process?**
 - A. Derived from osteoprogenitor cells; secrete organic matrix
 - B. Derived from osteoblasts; involved in bone maintenance
 - C. Derived from osteoclasts; resorb bone
 - D. Derived from chondrocytes; form cartilage

- 7. The insertion of opponens digiti minimi is on which structure?**
- A. Lateral side of the 5th metacarpal
 - B. Medial side of the 5th metacarpal
 - C. Dorsal expansion over the proximal phalanx of the little finger
 - D. Base of proximal phalanx of the little finger
- 8. Where does the extensor pollicis longus insert?**
- A. Lateral base of thumb's proximal phalanx
 - B. Base of distal phalanx of thumb
 - C. Base of 5th metacarpal
 - D. Proximal end of radius
- 9. Which muscle inserts on the medial side of the base of the proximal thumb phalanx?**
- A. Adductor pollicis
 - B. Opponens pollicis
 - C. Flexor pollicis brevis
 - D. Abductor pollicis longus
- 10. The origin of opponens digiti minimi is which structure?**
- A. Flexor retinaculum
 - B. Hamate
 - C. Trapezium
 - D. Capitate

Answers

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

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Explanations

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1. Which of the following is an origin of the deltoid?

- A. Lateral 3rd of clavicle**
- B. Medial epicondyle of humerus
- C. Olecranon
- D. Coronoid process of ulna

The deltoid has multiple origins on the shoulder girdle, with one key attachment being the lateral third of the clavicle. Along with the acromion and the spine of the scapula, this clavicular origin anchors the deltoid before its fibers converge to insert on the deltoid tuberosity of the humerus. So the lateral third of the clavicle is correct because it is a legitimate origin site for the deltoid. The other sites listed are not deltoid origins. The medial epicondyle of the humerus is a common origin for many forearm flexors, not the deltoid. The olecranon is where the triceps inserts, and the coronoid process of the ulna serves as an attachment for other muscles like the brachialis.

2. The flexor pollicis brevis inserts on which aspect of the proximal phalanx?

- A. Lateral side of base of proximal phalanx of thumb**
- B. Anterior side of the 1st metacarpal
- C. Base of 5th metacarpal
- D. Distal phalanx of thumb

The key idea is where a muscle attaches determines which joint it acts on. The flexor pollicis brevis is one of the thumb's thenar muscles and crosses the metacarpophalangeal joint to flex the thumb. Its tendon ends at the base of the proximal phalanx of the thumb, on the lateral (radial) side. This placement lets it pull the proximal phalanx forward at the MCP joint, producing thumb flexion and contributing to grip, while working alongside the other thenar muscles. The other options point to insertions on different bones or joints that wouldn't produce the same MCP flexion—for example, the distal phalanx is targeted by the flexor pollicis longus, and the base of the fifth metacarpal relates to muscles for the little finger.

3. Goblet cells secrete mucus that coats the free surface of which tissue?

- A. Connective tissue
- B. Muscle tissue
- C. Nervous tissue
- D. Simple epithelial cells**

Goblet cells are mucus-secreting cells embedded in epithelial tissue. They release mucin, which hydrates to form mucus that coats the apical (free) surface of the epithelium. This mucus layer protects, lubricates, and traps debris on surfaces such as those lining the digestive and respiratory tracts. They occur within simple epithelia (and even pseudostratified ciliated epithelium), but not in connective, muscle, or nervous tissues. So the mucus coats the free surface of simple epithelial cells.

4. Which muscle primarily extends the arm at the shoulder?

- A. Latissimus dorsi**
- B. Pectoralis major
- C. External oblique
- D. Brachioradialis

Extending the arm at the shoulder means moving the upper arm backward at the glenohumeral joint. The latissimus dorsi is a major muscle for this movement, pulling the humerus posteriorly while also aiding adduction and medial rotation. Its broad origin along the back and its insertion on the humerus position it well to generate powerful shoulder extension, such as in rowing motions. The pectoralis major, by contrast, mainly flexes the shoulder and helps with adduction from certain positions; it is not the primary extender. The external oblique is a trunk muscle and does not move the shoulder joint. Brachioradialis acts at the elbow, not the shoulder. So the latissimus dorsi best fits the action of extending the arm at the shoulder.

5. Which of the following is NOT a type of cartilage?

- A. Areolar**
- B. Hyaline
- C. Elastic
- D. Fibrocartilage

Cartilage is a specialized, semi-rigid connective tissue with chondrocytes living in lacunae inside a firm, gel-like extracellular matrix rich in glycosaminoglycans. It comes in three main forms—hyaline, elastic, and fibrocartilage—each with distinct matrix fibers: hyaline has a relatively glassy, collagen II-rich matrix; elastic cartilage includes elastic fibers for flexibility; fibrocartilage contains thick bundles of collagen for great tensile strength. Areolar tissue, by contrast, is a loose connective tissue characterized by a loose mesh of collagen and elastic fibers, a variety of resident cells, and a relatively soft ground substance. It does not have the firm, chondrocyte-containing matrix or lacunae structure that defines cartilage, nor is it avascular in the same way cartilage is. Because of these differences, Areolar tissue is not cartilage, making it the correct choice.

6. Osteocytes are derived from which cell type and are involved in what process?

- A. Derived from osteoprogenitor cells; secrete organic matrix
- B. Derived from osteoblasts; involved in bone maintenance**
- C. Derived from osteoclasts; resorb bone
- D. Derived from chondrocytes; form cartilage

Osteocytes come from osteoblasts that become embedded in the bone matrix they secreted. As bone is laid down and mineralizes, some osteoblasts are trapped in small cavities (lacunae) and mature into osteocytes, extending tiny processes through canaliculi to communicate with other cells. Their main role is to maintain mature bone tissue and coordinate remodeling in response to mechanical stress and mineral balance. They signal to osteoblasts and osteoclasts when bone formation or resorption is needed. This distinguishes them from osteoprogenitor cells (which give rise to osteoblasts that secrete matrix), osteoclasts (which resorb bone), and chondrocytes (which form cartilage).

7. The insertion of opponens digiti minimi is on which structure?

- A. Lateral side of the 5th metacarpal
- B. Medial side of the 5th metacarpal**
- C. Dorsal expansion over the proximal phalanx of the little finger
- D. Base of proximal phalanx of the little finger

Opponens digiti minimi is a hypothenar muscle whose action is to oppose the little finger by pulling the fifth metacarpal toward the palm. Its insertion is on the medial border of the fifth metacarpal, which lets it rotate and flex the metacarpal so the little finger moves toward the thumb across the palm. This medial placement specifically enables that inward, opposed position. The other sites don't match the muscle's action: the lateral side would move the bone in the opposite direction; a dorsal expansion relates to extensor mechanism rather than this insertion; and the base of the proximal phalanx is the insertion for other muscles like the abductor digiti minimi.

8. Where does the extensor pollicis longus insert?

- A. Lateral base of thumb's proximal phalanx
- B. Base of distal phalanx of thumb**
- C. Base of 5th metacarpal
- D. Proximal end of radius

Extensor pollicis longus serves to straighten the thumb by pulling on its distal phalanx. The tendon travels to the dorsal base of the distal phalanx of the thumb, where it inserts. This placement specifically allows extension at the interphalangeal joint (and also helps with MCP extension). By contrast, the extensor pollicis brevis attaches to the base of the proximal phalanx, not the distal phalanx, so it doesn't perform the same distal-thumb extension. The other options point to insertions of different structures or origins (not EPL), such as the proximal end of the radius (an origin for some forearm muscles) or a metacarpal base for other tendons.

9. Which muscle inserts on the medial side of the base of the proximal thumb phalanx?

- A. Adductor pollicis**
- B. Opponens pollicis
- C. Flexor pollicis brevis
- D. Abductor pollicis longus

The movement described is produced by a muscle that attaches to the inner (ulnar) side of the base of the proximal phalanx of the thumb. That insertion point is distinctive of the adductor pollicis, whose tendon goes to the medial base of the proximal phalanx and helps pull the thumb toward the palm (thumb adduction) to stabilize the grip. The other muscles have different insertion patterns: opponens pollicis mainly attaches to and moves the metacarpal bone on the thumb's radial side to oppose the thumb; flexor pollicis brevis attaches to the lateral side of the proximal phalanx to flex the thumb; abductor pollicis longus runs to the base of the first metacarpal, not the proximal phalanx.

10. The origin of opponens digiti minimi is which structure?

A. Flexor retinaculum

B. Hamate

C. Trapezium

D. Capitate

Opponens digiti minimi sits in the hypothenar area on the ulnar side of the palm, and its job is to bring the little finger toward the thumb by rotating the fifth metacarpal. Its main anchor is the hook of the hamate bone, with some sources also noting fibers from the flexor retinaculum. That hook of the hamate provides a solid bony origin from which the muscle fibers run to the fifth metacarpal to produce opposition. The trapezium and capitate are different carpal bones not associated with this muscle's origin, and the flexor retinaculum is a ligament, not the primary bony origin.

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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-biol319practical1.examzify.com>

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

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