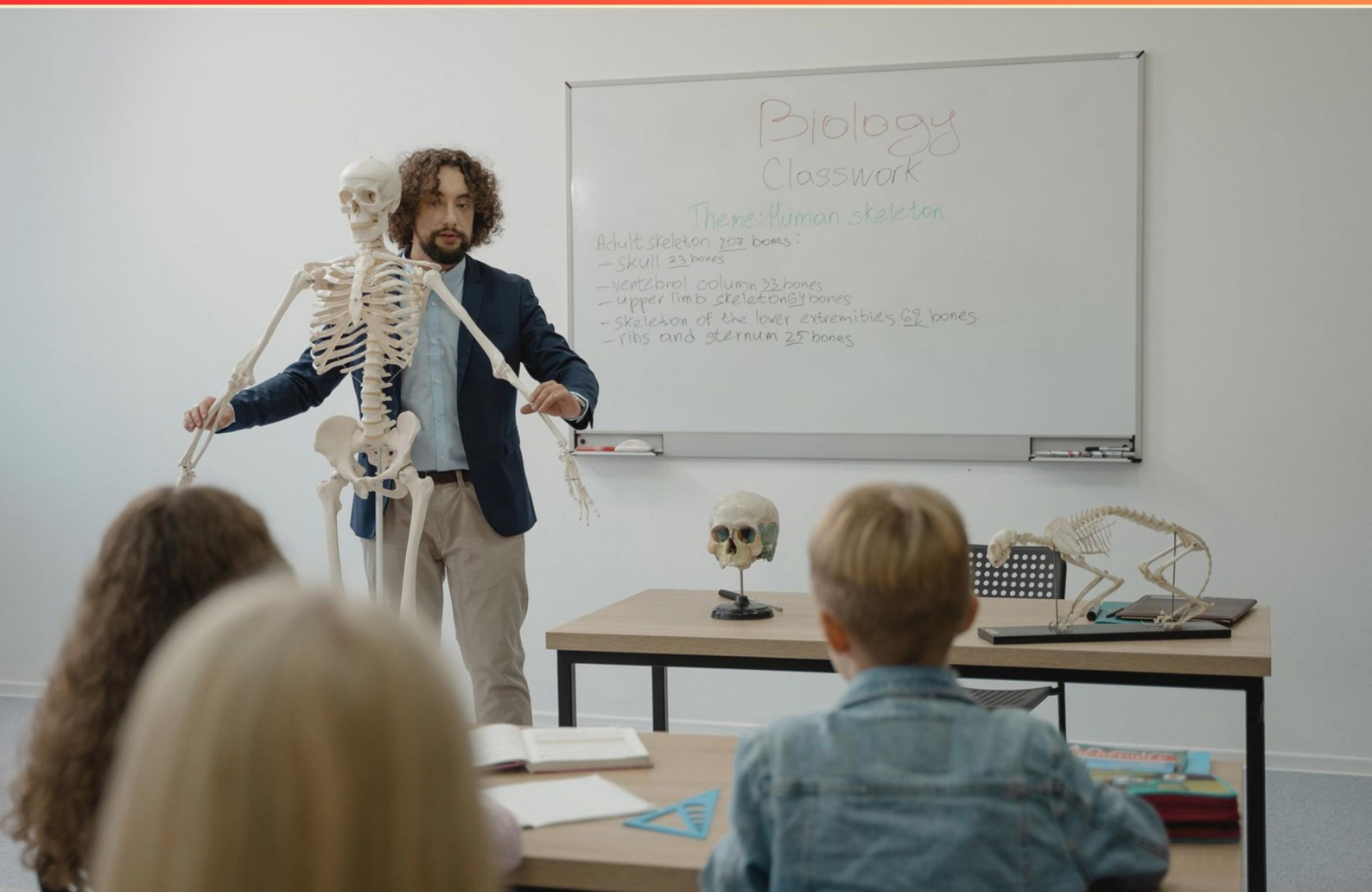


IVY TECH APHY 101 – SKELETAL SYSTEM PRACTICE TEST (SAMPLE)

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. What bones comprise the rib cage?

- A. True ribs attach directly to the sternum; false ribs attach indirectly via cartilage; floating ribs do not attach anteriorly; sternum and thoracic vertebrae.
- B. True ribs attach indirectly via cartilage; false ribs attach directly to sternum; floating ribs attach anteriorly.
- C. True ribs (1–7) attach directly to sternum; false ribs (8–10) attach indirectly via cartilage; floating ribs (11–12) do not attach anteriorly.
- D. All ribs attach directly to the sternum.

2. Which term describes a smooth, nearly flat articular surface?

- A. Facet
- B. Groove
- C. Fissure
- D. Foramen

3. Hydroxyapatite minerals provide hardness and resistance to which type of stress?

- A. Compression
- B. Tension
- C. Torsion
- D. Shear

4. Name the bones of the upper limb in order from proximal to distal.

- A. Radius and Ulna
- B. Humerus; radius and ulna; carpals; metacarpals; and phalanges.
- C. Femur; tibia; fibula; metatarsals
- D. Scapula; clavicle; humerus; radius

5. Which term refers to projections that are sites of muscle and ligament attachment?

- A. Tuberosity
- B. Process
- C. Crest
- D. Spine

6. Which term describes a large rounded projection that may be roughened?

- A. Tuberosity
- B. Crest
- C. Line
- D. Trochanter

7. Which statement best describes red and yellow marrow histology?

- A. Red marrow contains hematopoietic tissue producing blood cells
- B. Yellow marrow adipose tissue
- C. Red marrow stores fat
- D. Yellow marrow hematopoietic tissue

8. What forms just deep to the periosteum after woven bone develops in intramembranous ossification?

- A. Lamellar bone
- B. Compact bone
- C. Fibrous membrane
- D. Cartilage

9. What term describes a break in the continuity of bone?

- A. Fracture
- B. Osteoporosis
- C. Osteomyelitis
- D. Arthritis

10. Which thyroid hormone lowers blood calcium levels by stimulating osteoblasts to build bone?

- A. Calcitonin
- B. Parathyroid hormone
- C. Thyroxine
- D. Calcitriol

Answers

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

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Explanations

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1. What bones comprise the rib cage?

- A. True ribs attach directly to the sternum; false ribs attach indirectly via cartilage; floating ribs do not attach anteriorly; sternum and thoracic vertebrae.
- B. True ribs attach indirectly via cartilage; false ribs attach directly to sternum; floating ribs attach anteriorly.
- C. True ribs (1–7) attach directly to sternum; false ribs (8–10) attach indirectly via cartilage; floating ribs (11–12) do not attach anteriorly.**
- D. All ribs attach directly to the sternum.

The rib cage is described by how the ribs connect to the sternum. The first seven pairs, called true ribs, attach directly to the sternum through their own costal cartilage. The next three pairs, known as false ribs, do not attach directly to the sternum but connect to the cartilage of the rib above, forming indirect attachment to the sternum. The last two pairs are floating ribs; they do not attach to the sternum at all and end anteriorly in the muscle tissue of the chest wall. Together with the sternum and the thoracic vertebrae, these ribs form the complete rib cage.

2. Which term describes a smooth, nearly flat articular surface?

- A. Facet**
- B. Groove
- C. Fissure
- D. Foramen

A smooth, nearly flat articular surface is called a facet. Facets provide a flat or slightly curved surface that permits smooth gliding between bones in a joint, such as the articular facets on vertebrae that stack to form the joints between adjacent vertebrae (zygapophysial joints). This flat surface is specially shaped for articulation, allowing movement with minimal resistance. Other terms describe different bone features: a groove is a long, shallow depression or channel that guides structures like tendons or nerves; a fissure is a narrow slit-like opening through bone; a foramen is a hole through which nerves and vessels pass.

3. Hydroxyapatite minerals provide hardness and resistance to which type of stress?

- A. Compression**
- B. Tension
- C. Torsion
- D. Shear

The main idea is that bone's mineral component, hydroxyapatite, provides hardness and strong resistance to compressive forces. When you bear weight or press down, bones are mainly under compression, and the rigid hydroxyapatite crystals help push back against that squeezing without deforming much. The flexible collagen matrix in bone handles pulling apart forces (tension) and helps prevent cracks from spreading, while twisting (torsion) or sliding forces (shear) involve a mix of stresses that rely on both minerals and collagen for resistance. So, hydroxyapatite's strength is most closely aligned with resisting compression.

4. Name the bones of the upper limb in order from proximal to distal.

- A. Radius and Ulna
- B. Humerus; radius and ulna; carpals; metacarpals; and phalanges.**
- C. Femur; tibia; fibula; metatarsals
- D. Scapula; clavicle; humerus; radius

The main idea is the sequential arrangement of the bones from the shoulder toward the fingertips. From closest to the body outward, the bones are the humerus in the upper arm, followed by the two forearm bones radius and ulna, then the wrist bones called carpals, the palm bones called metacarpals, and finally the finger bones called phalanges. This order reflects how the limb is structured and moves: the arm bone connects to the forearm bones at the elbow, the forearm bones reach the wrist carpals, and those connect to the metacarpals and then the phalanges. The other options shift in ways that don't follow this proximal-to-distal progression, or include bones not typically counted as part of the upper limb proper.

5. Which term refers to projections that are sites of muscle and ligament attachment?

- A. Tuberosity
- B. Process**
- C. Crest
- D. Spine

Projections on bones that serve as attachment points for muscles and ligaments are called processes. This term is the general category for any outward projection, while the other terms describe specific shapes of those projections (for example, a tuberosity is a large rounded bump, a crest is a narrow ridge, and a spine is a thin, sharp projection). Since the question asks for the broad term that covers all such attachment sites, and not a particular shape, process is the best choice.

6. Which term describes a large rounded projection that may be roughened?

- A. Tuberosity**
- B. Crest
- C. Line
- D. Trochanter

A tuberosity is a large rounded bump on a bone that is often roughened to provide a strong attachment surface for muscles or ligaments. The rough texture increases grip and surface area, helping tendons or ligaments anchor under tension. You see this in places like the tibial tuberosity beneath the knee, the ischial tuberosity you sit on, or the deltoid tuberosity on the humerus. This description—large and rounded with a roughened surface—best matches tuberosity, whereas crests are narrow ridges, lines are even thinner ridges, and trochanters are large projections (often on the femur) but not necessarily described as the rounded, roughened bump implied here.

7. Which statement best describes red and yellow marrow histology?

A. Red marrow contains hematopoietic tissue producing blood cells

B. Yellow marrow adipose tissue

C. Red marrow stores fat

D. Yellow marrow hematopoietic tissue

Red marrow is the site where blood cell production happens. Histology shows hematopoietic cells at various stages of development embedded in a loose reticular framework with many blood sinusoids, all sitting in the trabecular spaces of cancellous bone. This tissue includes precursors for red blood cells, white blood cells, and platelets, highlighting its primary role in forming blood cells. Yellow marrow, by contrast, is mainly adipose tissue that stores fat, and red marrow can be reactivated to red marrow under certain conditions, but in typical histology it is the hematopoietic tissue that defines red marrow. That makes the statement describing red marrow as containing hematopoietic tissue producing blood cells the best fit.

8. What forms just deep to the periosteum after woven bone develops in intramembranous ossification?

A. Lamellar bone

B. Compact bone

C. Fibrous membrane

D. Cartilage

In intramembranous ossification, bone starts as woven bone laid down by osteoblasts from mesenchyme, which is initially relatively disorganized and weak. Over time, this woven bone is remodeled and replaced with lamellar bone, which has organized, parallel layers of collagen fibers (lamellae) that give it much greater strength. Just beneath the periosteum, the outer surface of the developing bone is formed as this lamellar bone, creating the compact, mature bone layer under the membrane. Cartilage isn't involved in this pathway, and the periosteum itself is the surrounding fibrous layer, not the tissue that forms inside. So the tissue that forms just deep to the periosteum after woven bone develops is lamellar bone.

9. What term describes a break in the continuity of bone?

A. Fracture

B. Osteoporosis

C. Osteomyelitis

D. Arthritis

A break in the continuity of bone is called a fracture. That term specifically describes any disruption to the bone's structure, whether it's a crack or a complete break, and it can occur with the skin intact (closed fracture) or with the bone protruding through the skin (open fracture). Other terms describe different conditions: osteoporosis involves loss of bone density making bones fragile, osteomyelitis is an infection of bone, and arthritis is inflammation of a joint. Fracture healing proceeds through stages—formation of a hematoma, development of a callus, ossification, and remodeling back to normal bone.

10. Which thyroid hormone lowers blood calcium levels by stimulating osteoblasts to build bone?

A. Calcitonin

B. Parathyroid hormone

C. Thyroxine

D. Calcitriol

Calcium balance is controlled by hormones that shift calcium between bone and blood during bone remodeling. Calcitonin lowers blood calcium levels by acting on bone to prevent calcium release: it inhibits osteoclast activity, which reduces bone resorption, and supports the deposition of calcium into bone. This causes a net move of calcium from blood into bone, lowering serum calcium. Calcitonin is produced by the C cells of the thyroid, which is why it's described as a thyroid hormone in this context. The other options don't fit this mechanism as neatly. Parathyroid hormone raises blood calcium by stimulating osteoclasts to break down bone and by increasing intestinal and renal calcium absorption. Calcitriol (vitamin D) increases calcium absorption from the gut and can enhance bone turnover, which tends to raise or regulate calcium levels rather than lower them. Thyroxine mainly increases metabolic activity and can accelerate bone turnover, potentially contributing to bone loss if in excess, rather than specifically lowering calcium through stimulating bone formation.

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://ivytechaphy101skeletalsys.examzify.com>

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

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