

# Mandible, TMJ, Bone Modeling Practice Test (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. What is the main function of the temporomandibular (lateral) ligament?**
  - A. Prevents lateral displacement only**
  - B. Prevents posterior displacement only**
  - C. Prevents superior displacement**
  - D. Prevents lateral and posterior displacement**
  
- 2. What is the main function of the sphenomandibular (medial) ligament?**
  - A. Maintains tension during jaw opening and closing**
  - B. Stabilizes the TMJ during lateral movements**
  - C. Limits posterior movement of the mandible**
  - D. Prevents anterior dislocation of the jaw**
  
- 3. Which artery among the six listed as supplying the TMJ is a branch of the maxillary artery?**
  - A. Deep Auricular**
  - B. Ascending Pharyngeal**
  - C. Superficial Temporal**
  - D. External Carotid**
  
- 4. Weakest part of a normal bone is along what?**
  - A. Diaphysis**
  - B. Epiphysis**
  - C. Metaphysis**
  - D. Periosteum**
  
- 5. Which fissure separates the anterior from the posterior portion of the TMJ fossa?**
  - A. Petrotympanic fissure**
  - B. Stylomastoid foramen**
  - C. Foramen ovale**
  - D. Superior orbital fissure**

- 6. Which term is another name for spongy bone?**
- A. Cancellous**
  - B. Cortical**
  - C. Compact**
  - D. Trabecular**
- 7. Which bone type forms the inner porous region of a typical bone?**
- A. Spongy**
  - B. Compact**
  - C. Cortical**
  - D. Trabecular**
- 8. Which fibers provide tensile strength to bone due to being organized at 45 degree angles from each other?**
- A. Collagen**
  - B. Elastin**
  - C. Reticulin**
  - D. Fibrin**
- 9. After a blood clot forms, which arteries undergo vasospasm causing the death of osteoblasts outside of the original break zone?**
- A. Haversian arteries**
  - B. Central arteries**
  - C. Volkmann's arteries**
  - D. Nutrient arteries**
- 10. Calcium Apatite Crystals used at a graft extraction site are a form of which mineral category?**
- A. Calcium Phosphate**
  - B. Calcium Carbonate**
  - C. Silicon Dioxide**
  - D. Magnesium Phosphate**

## Answers

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

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## **Explanations**

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**1. What is the main function of the temporomandibular (lateral) ligament?**

- A. Prevents lateral displacement only**
- B. Prevents posterior displacement only**
- C. Prevents superior displacement**
- D. Prevents lateral and posterior displacement**

The temporomandibular ligament acts to stabilize the joint by limiting movements that could dislocate the condyle. It serves as the main restraint against backward (posterior) movement and also helps prevent sideways (lateral) displacement of the mandible. Because it is a thickened part of the joint capsule on the lateral side, it tightens when the jaw opens wide or moves to the side, guarding against dislocation. It doesn't primarily limit upward (superior) displacement, which is addressed by other structures and the disc mechanism, so the combined restraint on lateral and posterior movement is the best description of its main function.

**2. What is the main function of the sphenomandibular (medial) ligament?**

- A. Maintains tension during jaw opening and closing**
- B. Stabilizes the TMJ during lateral movements**
- C. Limits posterior movement of the mandible**
- D. Prevents anterior dislocation of the jaw**

The sphenomandibular ligament acts as a passive check ligament for the mandible. It runs from the spine of the sphenoid to the lingula of the mandible and primarily limits excessive opening of the jaw, helping to stabilize the mandible as it moves. This is why it's described as maintaining tension during jaw movement—especially when the mouth opens wide—providing a restraining influence that prevents too much downward translation. Other ligaments around the TMJ have different primary roles, such as restricting posterior movement, stabilizing during lateral shifts, or limiting protrusion, so this ligament's main job is the restraint and passive support during opening.

**3. Which artery among the six listed as supplying the TMJ is a branch of the maxillary artery?**

- A. Deep Auricular**
- B. Ascending Pharyngeal**
- C. Superficial Temporal**
- D. External Carotid**

The TMJ receives several arterial branches from the maxillary artery, especially from its first part. Among the arteries listed, the deep auricular artery is a branch of the maxillary artery. It runs with the tympanic membrane area and supplies the external auditory canal as well as the TMJ region, making it one of the vessels that directly stems from the maxillary artery to feed the joint. The other arteries come from different sources: the ascending pharyngeal artery arises from the external carotid artery, the superficial temporal artery is a terminal branch of the external carotid, and the external carotid artery is the larger vessel that gives rise to many branches (including the maxillary and superficial temporal), not a branch of the maxillary itself.

#### 4. Weakest part of a normal bone is along what?

- A. Diaphysis**
- B. Epiphysis**
- C. Metaphysis**
- D. Periosteum**

The main idea here is where a long bone tends to fail first under typical loads: the midshaft region, or the diaphysis, is the weakest link. The diaphysis is a hollow cylinder of dense cortical bone that carries the bulk of bending and torsional stresses along the bone's length. When forces are applied, this central shaft bears high moments of bending with relatively less reinforcement from the ends, which are shaped by articular surfaces and a different internal architecture. The ends (epiphyses) are protected by articular cartilage and have more cancellated bone that helps distribute stress, while the metaphysis sits at a transition with a different lattice structure. The periosteum, while important for growth and repair, isn't a primary contributor to structural strength. For these reasons, the diaphysis is typically considered the weakest part of a normal bone.

#### 5. Which fissure separates the anterior from the posterior portion of the TMJ fossa?

- A. Petrotympanic fissure**
- B. Stylomastoid foramen**
- C. Foramen ovale**
- D. Superior orbital fissure**

The TMJ fossa is conceptually split into front and back parts by a small fissure that marks its boundary. The fissure that does this is the petrotympanic fissure. It lies between the tympanic part and the petrous part of the temporal bone, creating a natural division between the anterior articular area of the fossa and the posterior region near the middle ear. This fissure also transmits the chorda tympani nerve, which helps explain why it's a notable landmark in the area around the temporomandibular joint. The other openings are in different regions and serve other structures—stylomastoid foramen for the facial nerve exit, foramen ovale for the mandibular nerve, and the superior orbital fissure for nerves entering the orbit—so they don't define the split within the TMJ fossa.

#### 6. Which term is another name for spongy bone?

- A. Cancellous**
- B. Cortical**
- C. Compact**
- D. Trabecular**

Spongy bone is the porous interior part of bone, made up of a lattice of thin trabeculae. Because of this lattice-like, spongy appearance, the tissue is called cancellous bone. That term is the standard name for this type of bone and is used to describe its light, highly vascular, marrow-housing interior. While you may also hear trabecular bone to refer to the same internal network, cancellous is the formal name for the tissue itself. The other terms describe different aspects: cortical (or compact) bone is the dense outer shell that gives strength and rigidity, whereas trabecular describes the internal lattice structure rather than naming the tissue category itself.

**7. Which bone type forms the inner porous region of a typical bone?**

- A. Spongy**
- B. Compact**
- C. Cortical**
- D. Trabecular**

The inner porous region of a typical bone is spongy bone, also called trabecular bone. Its lattice of thin trabeculae creates a light yet strong framework that reduces weight and often houses bone marrow in the spaces. In contrast, the outer layer is dense bone, known as compact or cortical bone, which provides most of the bone's strength. So spongy (trabecular) bone is the correct description for the inner porous region.

**8. Which fibers provide tensile strength to bone due to being organized at 45 degree angles from each other?**

- A. Collagen**
- B. Elastin**
- C. Reticulin**
- D. Fibrin**

Tensile strength in bone mainly comes from collagen type I fibers arranged in laminated layers. These fibers run at about 45 degrees to the long axis within each lamella, and neighboring lamellae orient in different directions (often rotating by ~90 degrees). This alternating, angled organization creates a twisted plywood pattern that resists pulling and twisting from multiple directions, giving bone toughness and resistance to fracture. The other fibers listed don't provide this structural tensile framework in bone: elastin adds elasticity in soft tissues, reticulin forms delicate networks in organs, and fibrin is involved in blood clotting. So collagen is the fiber responsible for that directional tensile strength.

**9. After a blood clot forms, which arteries undergo vasospasm causing the death of osteoblasts outside of the original break zone?**

- A. Haversian arteries**
- B. Central arteries**
- C. Volkmann's arteries**
- D. Nutrient arteries**

The blood supply inside cortical bone comes from the Haversian system, where central arteries run through the Haversian canals to nourish the osteoblasts and osteocytes in the surrounding lamellae. After a fracture, a clot forms and a vasospastic response can narrow these intramedullary cortical vessels. When the Haversian arteries go into spasm, perfusion to osteoblasts outside the immediate fracture line is reduced, leading to ischemic death of those cells. Since the cortical bone depends on this intralamellar vascular network for survival of osteoblasts, their loss outside the break zone impairs healing and can contribute to necrosis in those regions. The other arterial systems—perforating periosteal (Volkmann's) vessels supplying the periosteum, and the nutrient arteries feeding the medullary cavity—play roles in bone nutrition as well, but the described pattern of osteoblast death distant from the fracture most directly reflects ischemia from the Haversian (central) arterial network.

**10. Calcium Apatite Crystals used at a graft extraction site are a form of which mineral category?**

**A. Calcium Phosphate**

**B. Calcium Carbonate**

**C. Silicon Dioxide**

**D. Magnesium Phosphate**

Calcium phosphate is the category. Calcium apatite crystals belong to the apatite group, which are minerals where calcium combines with phosphate. Hydroxyapatite, the most well-known form, is a major component of natural bone mineral and is widely used as a bone graft substitute because it provides an osteoconductive scaffold for new bone growth. The other options—calcium carbonate, silicon dioxide, and magnesium phosphate—are different minerals with distinct compositions ( $\text{CaCO}_3$ ,  $\text{SiO}_2$ , and a magnesium-dominated phosphate, respectively) and do not represent the calcium phosphate family.

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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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://mandibletmjbonemodeling.examzify.com>**

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

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