BU DENTAL RADIOLOGY PRACTICE EXAM (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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

1. CBCT stands for?

A. Cone beam computed tomography
B. Cone beam digital tomography
C. Cone beam computerized tomography
D. Cone beam imaging tomography

2. The milliampere (mA) setting controls which image attribute?

A. Distortion
B. Sharpness
C. Density
D. Contrast

3. Periapical radiographs show what region?

A. Bitewing
B. Occlusal
C. Periapical
D. Panoramic

4. Bitewings show what?

A. Root tips and apices
B. Interproximal surfaces and crowns
C. Cervical margins
D. Pulp chambers

5. How many principal components does the film have, according to the material?

A. Two
B. One
C. Three
D. Four

6. Occlusal radiographs can detect which condition?

A. Interproximal caries
B. Root canal morphology
C. Temporomandibular joint disorders
D. Salivary duct stones

7. An underexposed radiographic image appears as

A. Film too dark

B. Normal density

C. Increased density

D. Film too light

8. Which statement correctly describes X-ray production in the dental tube?

A. X-rays are produced when electrons strike the tungsten target

B. X-rays are produced by heating the air

C. X-rays are produced by chemical reactions

D. X-rays are produced by magnetic alignment

9. Radiopaque areas on a radiograph appear as which color tone?

A. White

B. Black

C. Gray

D. Transparent

10. Doubling the distance from the radiation source has which effect on beam intensity?

A. Doubling distance doubles intensity

B. Doubling distance reduces intensity to one-quarter

C. Distance has no effect on intensity

D. Intensity increases with the square of distance

Answers

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

Explanations

1. CBCT stands for?

A. Cone beam computed tomography

B. Cone beam digital tomography

C. Cone beam computerized tomography

D. Cone beam imaging tomography

Cone beam computed tomography uses a cone-shaped X-ray beam and a flat-panel detector that rotate around the patient to collect many projection images, which are then reconstructed by computational algorithms to form a three-dimensional volume. The term "computed" reflects this math-based reconstruction that turns multiple 2D views into 3D data. This approach provides isotropic voxels and multiplanar reformats, making it especially useful in dentistry for evaluating teeth, roots, bone structure, and pathologies in a detailed, spatially accurate way. The phrasing "computerized tomography" is not the standard dental radiology term; the established expansion is cone beam computed tomography.

2. The milliampere (mA) setting controls which image attribute?

A. Distortion

B. Sharpness

C. Density

D. Contrast

The main idea is that the milliampere setting determines how many X-ray photons are produced, which changes the image density—the overall darkness of the radiograph. Increasing mA raises the tube current, producing more photons, so more radiation reaches the film or sensor and the image becomes darker. Decreasing mA does the opposite, making the image lighter. This is different from sharpness (which relates to focusing and motion) and distortion (geometric misalignment) or contrast (which is mainly affected by kVp and subject factors). So the attribute controlled by mA is density.

3. Periapical radiographs show what region?

A. Bitewing

B. Occlusal

C. Periapical

D. Panoramic

Periapical radiographs are focused on the area around the apex of a tooth. They capture the tooth from crown to root tip and include the surrounding bone, specifically showing the periapical region, the root ends, the lamina dura, and the periodontal ligament space. This makes them ideal for evaluating periapical health, root morphology, and canal status, as well as detecting lesions such as abscesses or granulomas near the root tips. In contrast, bitewing radiographs mainly visualize the crowns of posterior teeth and the interproximal areas between teeth; occlusal views capture a larger portion of the arch to show development or pathologies on the floor or roof of the mouth; panoramic radiographs provide a broad view of the entire jaws and supporting structures but with less detail about the periapical tissues of individual teeth. Therefore, the region shown by periapical radiographs is the periapical area around the tooth roots.

4. Bitewings show what?

A. Root tips and apices

B. Interproximal surfaces and crowns

C. Cervical margins

D. Pulp chambers

Bitewing images are designed to show the crowns of adjacent teeth and the interproximal surfaces between them. This placement lets you see contact areas and detect caries that occur between teeth, as well as assess the height of the supporting bone between teeth in the area of the crowns. Root tips and apices are better seen on periapical radiographs, not bitewings. Cervical margins are near the gumline and aren't the primary focus of bitewings, and pulp chambers are located inside the tooth and are not the main feature evaluated on bitewing views. So the description of interproximal surfaces and crowns best matches what bitewings show.

5. How many principal components does the film have, according to the material?

A. Two

B. One

C. Three

D. Four

The film is described as a three-layer, or three-principal-component, system. It has a base that provides sturdy support and thickness, an emulsion layer where the silver halide crystals are suspended to store the latent image, and a protective coating on top to guard the emulsion from scratches and handling damage. While there are additional sublayers and packaging details, those three are the main functional parts that define the film. So the number of principal components is three.

6. Occlusal radiographs can detect which condition?

A. Interproximal caries

B. Root canal morphology

C. Temporomandibular joint disorders

D. Salivary duct stones

Occlusal radiographs are especially useful for visualizing the floor of the mouth and the course of the salivary ducts, making them well suited to detect calcifications like salivary duct stones. A sialolith typically presents as a radiopaque mass along the duct path (often near Wharton's duct in the submandibular area) on these views, which is why this modality can reveal stones that might be missed on other projections. Interproximal caries are best seen on bitewing radiographs that show the contact areas between adjacent teeth; occlusal views don't provide the optimal angle or detail for those proximal surfaces. Root canal morphology requires views that clearly depict the tooth roots and canal systems—periapical radiographs or CBCT offer the needed detail. TMJ disorders are evaluated with dedicated TMJ imaging (and often MRI for soft-tissue assessment or CBCT for bony changes); occlusal radiographs don't offer sufficient detail for diagnosing TMJ pathology.

7. An underexposed radiographic image appears as

A. Film too dark

B. Normal density

C. Increased density

D. Film too light

Density on a radiograph is driven by how much exposure the film receives: more exposure darkens the image, while less exposure keeps it lighter. When there isn't enough X-ray exposure, the film doesn't develop enough blackened silver, so the image appears pale and lacking density. That's why an underexposed image is described as film too light. If the image were too dark, that would mean overexposure and increased density; a normally exposed image shows normal density; an image with increased density would also be overexposed.

8. Which statement correctly describes X-ray production in the dental tube?

A. X-rays are produced when electrons strike the tungsten target

B. X-rays are produced by heating the air

C. X-rays are produced by chemical reactions

D. X-rays are produced by magnetic alignment

X-ray production in a dental tube happens when high-energy electrons are emitted from a heated filament and accelerated toward a tungsten target. When these electrons collide with the tungsten atoms, their kinetic energy is converted into X-ray photons, primarily through Bremsstrahlung (rapid deceleration in the target's electric field) and, to a lesser extent, characteristic radiation from inner-shell transitions. Tungsten is used because its high atomic number makes X-ray production more efficient and its high melting point lets it withstand the heat from continuous firing. The other statements don't describe how X-rays are produced: heating air, chemical reactions, or magnetic alignment do not generate X-rays in this context.

9. Radiopaque areas on a radiograph appear as which color tone?

A. White

B. Black

C. Gray

D. Transparent

Radiopaque areas are white on a radiograph because dense structures absorb or block more X-rays, preventing many photons from reaching the detector. That strong attenuation makes those regions appear bright on the image. In contrast, less dense tissues absorb fewer X-rays and show up in gray tones, while air-filled spaces are radiolucent and appear black. A truly transparent area isn't how radiographs are depicted. So the bright white appearance indicates radiopacity.

10. Doubling the distance from the radiation source has which effect on beam intensity?

A. Doubling distance doubles intensity

B. Doubling distance reduces intensity to one-quarter

C. Distance has no effect on intensity

D. Intensity increases with the square of distance

The key relationship is the inverse square law: beam intensity is inversely proportional to the square of the distance from the source. Doubling the distance means the beam spreads over four times as much area, so the energy per unit area drops to one quarter. Mathematically, I 1/r^2, so at twice the distance I becomes I/4. Practically, this is why increasing distance reduces patient exposure, and why doubling distance does not increase intensity. The option that describes reducing to one-quarter is the correct reflection of this relationship.

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://budentalradiology.examzify.com

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