NBSTSA SURGICAL TECHNOLOGY (ST) 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.

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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!

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Questions

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1. What is the first step in the formation of an atheroma?

A. Collagen deposition and scar tissue formation

B. Injury to endothelial lining

C. Growth of new smooth muscle tissue

D. Accumulation of cholesterol and lipids

2. Omnipaque is a contrast medium primarily used for which medical procedure?

A. Schiller's test

B. Isotope scanning

C. Chromotubation

D. Angiography

3. During what phase of the cell cycle does the cytoplasmic division occur?

A. Metaphase.

B. Telophase.

C. Interphase.

D. Prophase.

4. The islets of Langerhans are found in which organ and secrete what hormone?

A. Liver; Glucagon

B. Pancreas; Insulin

C. Kidney; Erythropoietin

D. Adrenal gland; Cortisol

5. Which bone articulates with the distal tibia?

A. Femur

B. Talus

C. Calcaneus

D. Metatarsals

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6. Which part of the cell is primarily responsible for ATP production?

A. Nucleus.

B. Ribosome.

C. Mitochondria.

D. Endoplasmic reticulum.

7. What is the term for a virus that specifically infects bacterial cells?

A. Viroid

B. Chromatid

C. Bacteriophage

D. Inclusion

8. Which of the following statements is least descriptive of a vector?

A. Is a carrier of pathogens from one host to another

B. Can be an insect such as the mosquito

C. Must be living

D. Can be a contaminated syringe

9. Why is parenteral drug administration preferred in the operating room setting?

A. Allows for slower absorption of medication

B. Patients can self-administer medication

C. Reduces the risk of medication interactions

D. Bypasses absorption through the GI tract

10. Which diagnostic procedure is most useful for surgical planning in AAA repair?

A. Angiogram

B. Aortogram

C. CT scan

D. Ultrasound

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Answers

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

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Explanations

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1. What is the first step in the formation of an atheroma?

A. Collagen deposition and scar tissue formation

B. Injury to endothelial lining

C. Growth of new smooth muscle tissue

D. Accumulation of cholesterol and lipids

The first step in the formation of an atheroma is the injury to the endothelial lining of blood vessels. This initial injury, which can be caused by factors such as hypertension, smoking, diabetes, or high cholesterol, leads to increased permeability and dysfunction of the endothelial cells. When the endothelial lining is damaged, it allows for the infiltration of lipids and the deposition of inflammatory cells, setting the stage for further developments in atherosclerosis. Following the endothelial injury, various processes occur, including the accumulation of cholesterol and lipids within the vessel wall, smooth muscle cell proliferation, and collagen deposition. However, without the initial endothelial injury, these subsequent processes would not be initiated. Therefore, recognizing the role of endothelial injury is crucial to understanding the pathological progression that leads to the development of atheromas.

2. Omnipaque is a contrast medium primarily used for which medical procedure?

A. Schiller's test

B. Isotope scanning

C. Chromotubation

D. Angiography

Omnipaque is a non-ionic iodinated contrast medium that is primarily used in a range of imaging studies, particularly in angiography. Angiography is a medical imaging technique used to visualize the inside of blood vessels and organs, particularly for cardiovascular applications. The use of contrast agents like Omnipaque enhances the visibility of vascular structures, allowing for the assessment of blood flow and identification of abnormalities, such as blockages or lesions, effectively. The selection of Omnipaque for angiography is due to its water solubility and ability to provide high-contrast images, which are essential for accurate diagnosis and subsequent treatment planning. In contrast, the other procedures listed either do not typically require this specific type of contrast medium or use different modalities. This makes Omnipaque particularly suited for angiographic applications within the medical imaging field.

3. During what phase of the cell cycle does the cytoplasmic division occur?

A. Metaphase.

B. Telophase.

C. Interphase.

D. Prophase.

Cytoplasmic division, also known as cytokinesis, occurs during the telophase of the cell cycle. This phase follows anaphase, where the chromatin is at opposite poles of the cell after the chromosomes have separated. During telophase, the nuclear envelopes begin to reform around the two sets of chromosomes, and the cell starts to physically divide into two separate daughter cells. Cytokinesis typically overlaps with telophase and involves the formation of a cleavage furrow in animal cells or a cell plate in plant cells, effectively separating the cytoplasmic contents. In the context of the other choices, metaphase is characterized by the alignment of chromosomes at the cell's equatorial plane, interphase is the stage where the cell prepares for division and carries out its regular functions, and prophase marks the beginning of mitosis with chromatin condensing into visible chromosomes and the breakdown of the nuclear envelope. None of these phases involve the actual division of the cytoplasm, which makes telophase the correct answer for the timing of cytokinesis.

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4. The islets of Langerhans are found in which organ and secrete what hormone?

A. Liver; Glucagon

B. Pancreas; Insulin

C. Kidney; Erythropoietin

D. Adrenal gland; Cortisol

The islets of Langerhans are a group of cells located in the pancreas. They play a crucial role in the endocrine function of this organ by secreting hormones that regulate blood sugar levels, the most notable of which is insulin. Insulin is essential for facilitating the uptake of glucose into tissues, thereby lowering blood sugar levels and maintaining metabolic homeostasis. This pancreas function is distinct from that of the liver, kidneys, and adrenal glands. While the liver does produce hormones and performs various metabolic functions, it does not contain the islets of Langerhans nor primarily secrete insulin. The kidneys are responsible for the production of erythropoietin, which stimulates red blood cell production in response to low oxygen levels, while the adrenal glands produce cortisol, a hormone involved in stress response and metabolism regulation. Understanding the unique functions of these organs clarifies the significant role of the pancreas and the specific hormones it produces within the broader endocrine system.

5. Which bone articulates with the distal tibia?

A. Femur

B. Talus

C. Calcaneus

D. Metatarsals

The correct answer is the talus, which is the bone that articulates with the distal end of the tibia. This articulation forms an essential part of the ankle joint, specifically known as the talocrural joint. The talus sits between the tibia and fibula superiorly and the calcaneus inferiorly, playing a vital role in weight bearing and facilitating movement of the foot. The talus is unique among the bones of the body in that it does not have any muscles or tendons attached to it directly; instead, it serves primarily as a transitional structure that connects the leg to the foot. The joint formed between the tibia and talus is crucial for foot mobility, enabling movements such as dorsiflexion and plantarflexion. Understanding the anatomical relationships at the ankle joint is fundamental in surgical technology, as injuries or diseases affecting the talus or its articulations can have significant implications for mobility and may require surgical intervention.

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6. Which part of the cell is primarily responsible for ATP production?

A. Nucleus.

B. Ribosome.

C. Mitochondria.

D. Endoplasmic reticulum.

The mitochondria are primarily responsible for ATP production in the cell, often referred to as the "powerhouses" of the cell. They generate ATP through a process called oxidative phosphorylation, which occurs in the inner mitochondrial membrane. Mitochondria use nutrients and oxygen to produce ATP, releasing carbon dioxide and water as byproducts. The structure of mitochondria is specifically adapted for this function, as they contain their own DNA and ribosomes to facilitate the production of proteins essential for ATP synthesis. The foldings of the inner membrane, known as cristae, increase the surface area available for the enzymatic reactions needed to convert energy stored in food into a usable form of energy—ATP. This role in energy production is distinct from that of the other cellular components mentioned. The nucleus is primarily involved in storing genetic information and overseeing cellular functions, ribosomes are sites of protein synthesis, and the endoplasmic reticulum plays a key role in the synthesis of proteins and lipids. Each of these organelles has unique functions that support the overall workings of the cell, but ATP production is mainly the domain of the mitochondria.

7. What is the term for a virus that specifically infects bacterial cells?

A. Viroid

B. Chromatid

C. Bacteriophage

D. Inclusion

The term for a virus that specifically infects bacterial cells is "bacteriophage." Bacteriophages, often referred to as "phages," are a type of virus that target bacteria and can replicate within them. They attach to the bacterial cell surface and inject their genetic material into the host cell, which then uses the bacterial machinery to produce new phage particles. This process can lead to the lysis (destruction) of the bacterial cell, releasing new phage viruses into the environment to continue the infection cycle. Viroids, on the other hand, are small infectious pieces of RNA that do not have a protein coat and primarily affect plants, not bacteria. Chromatids are not related to viruses; they are strands of chromosomes that form during cell division. Inclusions refer to abnormal aggregations of substances within a cell, which are unrelated to the concept of viral infection. Thus, bacteriophage is the only option that accurately describes a virus specifically targeting bacterial cells.

8. Which of the following statements is least descriptive of a vector?

A. Is a carrier of pathogens from one host to another

B. Can be an insect such as the mosquito

C. Must be living

D. Can be a contaminated syringe

A vector is defined as an organism or agent that carries and transmits pathogens to another organism. In the context of disease transmission, vectors are typically living organisms, often arthropods such as mosquitoes or ticks, which can harbor and transfer infectious agents. The statement that a vector must be living is incorrect because vectors can also include non-living entities. For example, a contaminated syringe can serve as a vector for transmission of diseases like HIV or hepatitis if it has been used by an infected individual and not properly sterilized before being used by another person. This highlights that vectors are not limited to living hosts but can also include inanimate objects that facilitate the transfer of pathogens. In summary, while many vectors are living organisms, the essential aspect of a vector is its role in transporting pathogens, and this can include non-living items as well, making the assertion that a vector must be living the least accurate.

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9. Why is parenteral drug administration preferred in the operating room setting?

A. Allows for slower absorption of medication

B. Patients can self-administer medication

C. Reduces the risk of medication interactions

D. Bypasses absorption through the GI tract

Parenteral drug administration is preferred in the operating room setting primarily because it bypasses absorption through the gastrointestinal (GI) tract. This method delivers medications directly into the bloodstream, which leads to several significant advantages in the surgical context. First, parenteral administration ensures that the medication takes effect almost immediately, which is critical during surgical procedures where timely medication response is necessary for patient care. By avoiding the GI tract, there is no delay associated with the absorption process, which can vary based on factors such as digestion and stomach contents. Additionally, bypassing the GI tract eliminates the potential for degradation of the medication by stomach acids or enzymes, further enhancing the reliability of drug efficacy. This direct route is especially important in emergency situations or when precise dosing is critical, such as in anesthesia or pain management during surgery. The other options, while relevant in other contexts, do not provide the same level of direct benefit in the operating room setting as parenteral administration does.

10. Which diagnostic procedure is most useful for surgical planning in AAA repair?

A. Angiogram

B. Aortogram

C. CT scan

D. Ultrasound

The aortogram is particularly valuable for surgical planning in abdominal aortic aneurysm (AAA) repair because it provides detailed images of the aorta and any associated aneurysms. This imaging technique specifically focuses on the blood vessels, and by injecting a contrast dye into the aorta, it allows the surgical team to visualize the size and shape of the aneurysm, as well as its relation to surrounding structures. This information is crucial for determining the best approach for repair, selecting appropriate grafts, and assessing anatomical variations that could influence the surgical strategy. While other imaging modalities, such as a CT scan, are also commonly used in evaluating AAA, the aortogram offers real-time visualization of vascular anatomy and can sometimes be performed in combination with therapeutic interventions, making it a direct and effective choice for surgical planning.

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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:

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

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