OSMT (ONTARIO SOCIETY OF MEDICAL TECHNOLOGISTS) 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 do lymphocytes do in response to foreign antigens?

A. Produce antibodies

B. Phagocytosis

C. Trigger inflammation

D. Release histamines

2. What needs to be confirmed to ensure the quality of prepared media?

A. 4% is tested

B. Biochemical tests are run with known organisms

C. Contaminant counts are determined

D. Plates are aerobically incubated at 22C

3. Iodine is classified as a:

A. Phenolic

B. Halogen

C. Heavy metal

D. Aldehyde

4. What does the angle of clearance refer to in microtomy?

A. the angle made by the block face and the centre line of the knife

B. the angle made by the block face and the bevel of the knife

C. the angle made by the block face and the slant of the knife

D. the angle made by the centre line of the knife and the bevel of the knife

5. Material that has been placed on agar, but not incubated, should be packaged:

A. as 1A

B. as 2A

C. as 1B

D. with dry ice

6. Which antibody is most likely to be found on a B cell?

A. IgA

B. IgD

C. IgE

D. IgG

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7. The autonomic nervous system:

A. Includes the sympathetic nervous system

B. Is the same as the parasympathetic nervous system

C. Includes the brain and spinal cord

D. Is responsible for voluntary movement

8. Which action is recommended if a chemical sterilization unit (chemiclave) is used for sterilizing heat labile enrichments?

A. Oil

B. Heat labile enrichments

C. Powders

D. A and C

9. What is the specimen requirement for a red cell folate test?

A. 1-2 ml of whole blood drawn into an EDTA tube

B. 1-2 ml serum drawn into a red top tube

C. 3-5 ml of plasma drawn into an EDTA tube

D. 3-5 ml of serum drawn into an SST tube

10. What is the function of the dermis?

A. Contains blood vessels

B. Contains nerve endings

C. Contains pressure receptors

D. All of the above

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Answers

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

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Explanations

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1. What do lymphocytes do in response to foreign antigens?

A. Produce antibodies

B. Phagocytosis

C. Trigger inflammation

D. Release histamines

Lymphocytes play a crucial role in the immune response, particularly in recognizing and responding to foreign antigens, which are substances that the immune system identifies as foreign, such as pathogens or infected cells. When lymphocytes encounter these foreign antigens, specifically B cells, they produce antibodies. Antibodies are proteins that specifically target and neutralize foreign invaders, facilitating their removal from the body. The production of antibodies is a key component of the adaptive immune response, allowing for a tailored approach to each unique threat. Additionally, once these antibodies are produced, they can also help activate other components of the immune system, further strengthening the response against the detected antigens. The other answer choices do involve immune responses but are typically associated with different cell types or mechanisms. Phagocytosis is mainly carried out by phagocytes such as macrophages and neutrophils, which engulf and digest foreign particles. Triggering inflammation is a broader response that can be initiated by other immune cells and various signaling molecules, not just lymphocytes. Lastly, the release of histamines is primarily associated with mast cells and basophils and is more relevant to allergic responses and inflammatory processes rather than the direct recognition of foreign antigens by lymphocytes.

2. What needs to be confirmed to ensure the quality of prepared media?

A. 4% is tested

B. Biochemical tests are run with known organisms

C. Contaminant counts are determined

D. Plates are aerobically incubated at 22C

To ensure the quality of prepared media, it is essential to run biochemical tests with known organisms. This practice verifies that the media supports the growth of specific microorganisms and that it has the necessary nutritional components and environment required for those organisms. Performing these tests allows for the assessment of the media's effectiveness in supporting microbial growth and activity, ensuring that it is performing as expected. Conducting such tests helps confirm the media's suitability for diagnostic and research purposes, as different organisms have varying requirements in terms of pH, nutrients, and oxygen levels. By using known organisms, one can validate that the media's formulation is correct and that it will yield reliable results in practical applications. While other options may relate to aspects of media quality or testing, they do not directly confirm the media's capability to support the growth of target microorganisms in the same rigorous manner as running biochemical tests with known organisms.

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3. Iodine is classified as a:

A. Phenolic

B. Halogen

C. Heavy metal

D. Aldehyde

Iodine is classified as a halogen because it belongs to Group 17 of the periodic table, which includes other halogens such as fluorine, chlorine, bromine, and astatine. Halogens are characterized by their high reactivity and the ability to form salts when they react with metals. Iodine specifically is known for its role in various applications, including its use as a disinfectant and antiseptic, due to its effective antimicrobial properties linked to its high reactivity. Understanding iodine's classification as a halogen also highlights its chemical behavior, as halogens typically exist as diatomic molecules (e.g., I2) in their elemental state and readily engage in reactions that can incorporate them into various compounds. This distinction is crucial in fields like medical technology, where the proper categorization of substances informs their use and handling protocols in laboratory settings.

4. What does the angle of clearance refer to in microtomy?

A. the angle made by the block face and the centre line of the knife

B. the angle made by the block face and the bevel of the knife

C. the angle made by the block face and the slant of the knife

D. the angle made by the centre line of the knife and the bevel of the knife

The angle of clearance in microtomy is specifically related to the interaction between the block face, which holds the tissue sample, and the bevel of the microtome knife used to make thin sections for microscopic examination. This angle is crucial because it influences how smoothly the knife can cut through the sample, affecting the quality of the tissue sections produced. When the angle is appropriate, it allows for optimized cutting, reducing the risk of tearing the tissue and resulting in nicely preserved samples for histological analysis. Therefore, understanding that the angle of clearance is defined by the relationship between the block face and the bevel of the knife correctly aligns with the principles of microtomy and is essential for achieving the best outcomes in tissue sectioning.

5. Material that has been placed on agar, but not incubated, should be packaged:

A. as 1A

B. as 2A

C. as 1B

D. with dry ice

When material has been placed on agar but has not undergone incubation, it is considered to be at a stage where it may still be in a viable but dormant state. Packaging it as 1B is preferred for several reasons. Firstly, this classification indicates that the sample is not yet in an environment conducive for microbial growth, as it has not been incubated. Shipping it in this manner establishes appropriate handling procedures, ensuring that it is treated with caution until it can be properly analyzed. Moreover, categorizing the sample accurately helps maintain its integrity during transport. Given that it has not been incubated, there is no immediate need for temperature control measures that would be necessary for actively growing cultures—unlike options that suggest the use of dry ice, which is typically reserved for samples that require freezing temperatures to prevent spoilage or degradation. By utilizing the correct classification, technicians ensure that there are clear instructions for anyone handling the sample, preserving its condition until it is ready to be processed further. This systematic approach reflects best practices in laboratory management and ensures compliance with safety regulations.

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6. Which antibody is most likely to be found on a B cell?

A. IgA

B. IgD

C. IgE

D. IgG

The presence of IgD as an antibody primarily associated with B cells is central to understanding B cell maturation and activation. IgD serves as a crucial receptor on the surface of immature B cells, playing a significant role in the initiation of B cell activation upon encountering antigens. When a B cell binds to an antigen through IgD, it triggers subsequent steps leading to B cell proliferation and differentiation into plasma cells and memory cells. While other immunoglobulin classes, such as IgA, IgE, and IgG, have important functions in the immune response, they typically arise after B cells have been activated and undergone class switching. IgA is generally found in mucosal areas and is important for mucosal immunity, IgE is associated with allergic responses and protection against parasitic infections, and IgG is the most abundant antibody in the blood and is crucial for opsonization and neutralization of pathogens. Thus, the role of IgD as the principal antibody present on naive B cells prior to activation underscores its significance in the context of B cell biology.

7. The autonomic nervous system:

A. Includes the sympathetic nervous system

B. Is the same as the parasympathetic nervous system

C. Includes the brain and spinal cord

D. Is responsible for voluntary movement

The autonomic nervous system indeed includes the sympathetic nervous system, which is one of its two primary divisions, the other being the parasympathetic nervous system. The sympathetic nervous system is responsible for the body's 'fight or flight' responses, preparing the body for stressful situations by increasing heart rate, dilating airways, and suppressing non-essential functions. Understanding this relationship is crucial, as both divisions work together to maintain homeostasis in the body by regulating involuntary bodily functions, including heart rate, digestion, and respiratory rate. The other options do not accurately represent the autonomic nervous system. For example, the parasympathetic nervous system is a distinct part of the autonomic system, but they are not the same. The brain and spinal cord are components of the central nervous system, which is separate from the autonomic nervous system. Lastly, voluntary movement is under the control of the somatic nervous system, not the autonomic nervous system, which governs involuntary actions.

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8. Which action is recommended if a chemical sterilization unit (chemiclave) is used for sterilizing heat labile enrichments?

A. Oil

B. Heat labile enrichments

C. Powders

D. A and C

The use of a chemiclave for sterilizing heat labile enrichments specifically pertains to the need for methods that do not involve heat, as heat-sensitive materials can be compromised or rendered ineffective through traditional heat sterilization techniques. Heat labile enrichments, which include certain biological materials, enzymes, and other sensitive substances, must be sterilized by methods that do not involve high temperatures. Chemiclaves work by utilizing chemical agents to achieve sterilization instead of heat, making them suitable for materials that cannot withstand the rigors of conventional sterilization methods. Therefore, the recommended action for sterilizing heat labile enrichments is to use a chemiclave, confirming the answer aligns perfectly with the requirements of handling those sensitive materials. While the other options may hint at other potential strategies or materials involved in the broader context of sterilization, they do not pertain directly to the specific needs and characteristics of heat labile enrichments when using a chemiclave. Thus, focusing on the heat labile enrichments in the context of this question provides clarity on the appropriate action to take.

9. What is the specimen requirement for a red cell folate test?

A. 1-2 ml of whole blood drawn into an EDTA tube

B. 1-2 ml serum drawn into a red top tube

C. 3-5 ml of plasma drawn into an EDTA tube

D. 3-5 ml of serum drawn into an SST tube

The specimen requirement for a red cell folate test is indeed 1-2 ml of whole blood drawn into an EDTA tube. This is because red cell folate testing is designed to measure the level of folate within red blood cells, providing an indication of the body's folate status over the previous few months. Whole blood is essential for this test since the folate must be extracted from the red blood cells themselves, rather than from serum or plasma. The use of an EDTA tube is also critical, as EDTA acts as an anticoagulant, preventing the blood from clotting and allowing for accurate measurements of folate content within the red blood cells. In contrast, serum and plasma samples, which are mentioned in the other choices, do not provide the necessary content for assessing red cell folate levels because they reflect only the folate that may be present in the circulatory system at that moment, rather than the stored folate in red blood cells.

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10. What is the function of the dermis?

A. Contains blood vessels

B. Contains nerve endings

C. Contains pressure receptors

D. All of the above

The dermis plays a crucial role in the structure and functionality of the skin, and it encompasses several important features. Firstly, the dermis contains blood vessels, which are essential for supplying nutrients and oxygen to the skin and facilitating thermoregulation. The presence of these blood vessels allows the skin to respond to environmental changes and maintain a stable internal temperature. Secondly, the dermis is home to nerve endings that are critical for the sense of touch. These sensory receptors enable the skin to detect various stimuli like temperature, pain, and pressure, playing an important role in the body's overall sensory system. Lastly, it contains specialized pressure receptors, also known as mechanoreceptors, which respond to changes in pressure and vibration. These receptors provide the brain with information about tactile stimuli, enhancing the ability to interact with the environment. Therefore, since the dermis includes blood vessels, nerve endings, and pressure receptors, it is accurate to say that its functions encompass all these features, underscoring its importance in skin physiology and overall bodily function.

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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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