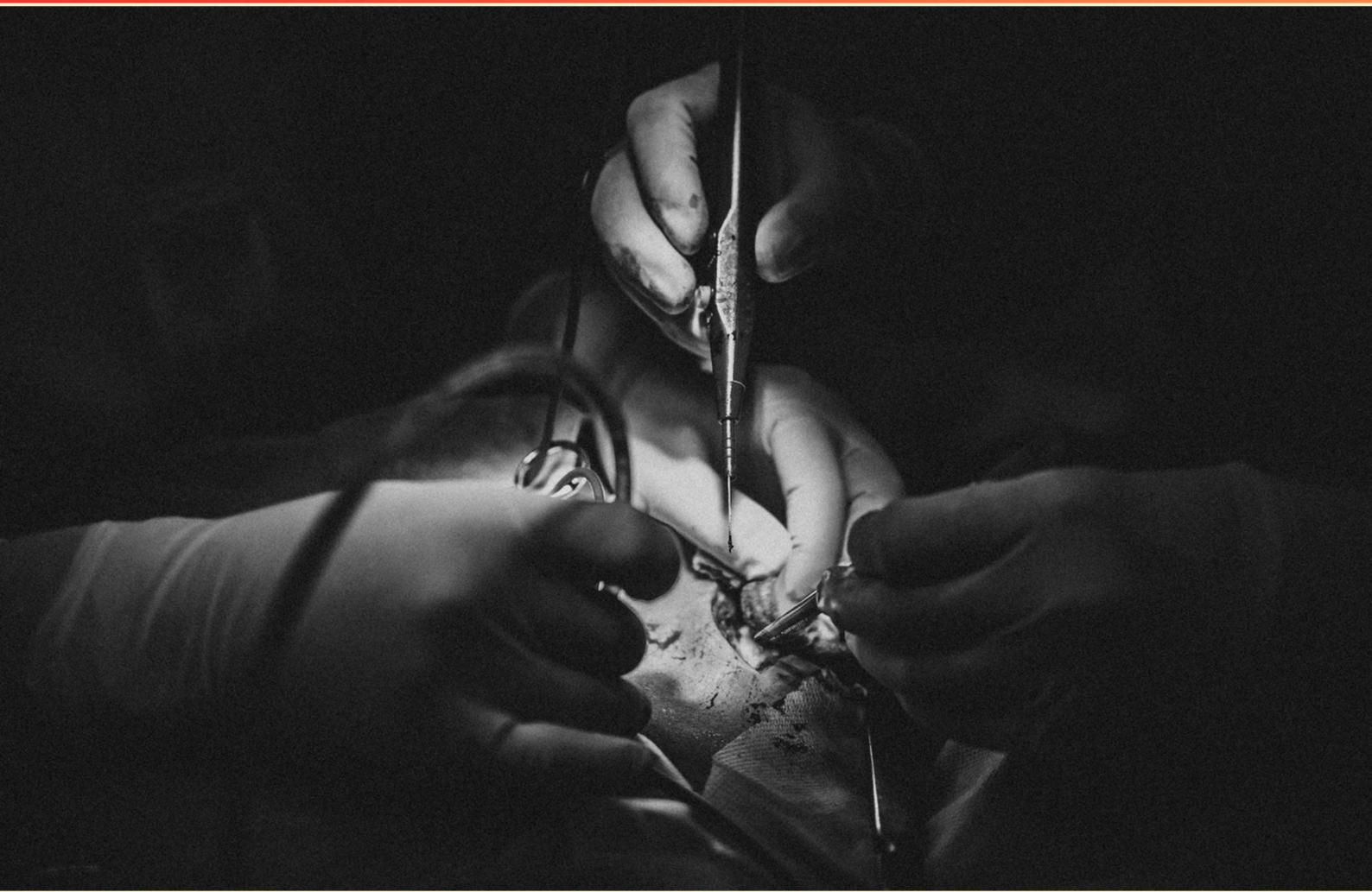


ANESTHESIA KNOWLEDGE TEST 24 (AKT-24) PRACTICE (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

<https://anesthesiaakt24.examzify.com>



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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 are potential rebound effects when Nitric Oxide is discontinued?**
 - A. Severe Hypertension
 - B. Methhemoglobinemia
 - C. Hypoglycemia
 - D. Acute Kidney Injury

- 2. Which type of PDPH is associated with a prior history of migraines?**
 - A. Primary
 - B. Secondary
 - C. Chronic
 - D. Post-surgical

- 3. How does an increase in mean arterial pressure (MAP) help protect the spinal cord?**
 - A. It increases peripheral resistance to blood flow
 - B. It enhances overall cardiac output
 - C. It supports spinal cord perfusion by improving blood flow
 - D. It decreases intracranial pressure directly

- 4. Where is grafting of the circumflex artery usually performed?**
 - A. To the anterior descending artery
 - B. To the marginal branches of the circumflex
 - C. To the right coronary artery
 - D. To the left main coronary artery

- 5. Which complication is associated with anesthesia dolorosa?**
 - A. Pain in an area that lacks sensation
 - B. Severe acute pain with hyperalgesia
 - C. Acute neuropathic pain
 - D. Persistent inflammation

6. What effect does a large amount of blood have on the oxygen-hemoglobin curve?
- A. Right shift due to high 2,3 BPG
 - B. Left shift due to low 2,3 BPG
 - C. No effect on the curve
 - D. Increased oxygen release to tissues
7. Which of the following ignition sources is commonly recognized in surgical settings?
- A. Electric scalpel
 - B. Surgical laser
 - C. Electrocautery
 - D. Scissors
8. When does vasospasm typically peak after a subarachnoid hemorrhage (SAH)?
- A. Between days 1-3
 - B. Between days 3-5
 - C. Between days 6-10
 - D. Between days 11-14
9. What is the first step to take when malignant hyperthermia is suspected?
- A. Notify the nurse
 - B. Stop the surgical procedure
 - C. Start cooling the patient
 - D. Administer anesthetic reversal
10. Which factor is NOT affected by cold temperatures during surgery?
- A. Coagulation factor function
 - B. Platelet aggregation
 - C. Fibrinogen levels
 - D. Fibrinolysis

Answers

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

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Explanations

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1. What are potential rebound effects when Nitric Oxide is discontinued?

- A. Severe Hypertension
- B. Methemoglobinemia**
- C. Hypoglycemia
- D. Acute Kidney Injury

When Nitric Oxide is discontinued, one of the concerns is the potential development of methemoglobinemia, which can occur as a rebound effect. Nitric Oxide is often used in clinical settings for its vasodilatory properties and its role in improving oxygenation in patients, particularly those with pulmonary hypertension or respiratory distress. As Nitric Oxide is a potent pulmonary vasodilator, its abrupt withdrawal can lead to a sudden increase in pulmonary vascular resistance and a decrease in blood flow to the lungs. This situation can lead to a reduced ability to transport oxygen effectively. Furthermore, as Nitric Oxide interacts with hemoglobin to form methemoglobin, its sudden stop might leave a disproportionate amount of hemoglobin in an oxidized state, further impacting oxygen delivery to tissues. Methemoglobinemia itself can cause symptoms such as cyanosis, lethargy, and dyspnea, which are indicative of a reduced oxygen-carrying capacity of the blood. The risk is heightened in patients who have been receiving Nitric Oxide therapy for an extended period. While the other options presented (severe hypertension, hypoglycemia, and acute kidney injury) could theoretically occur in patients transitioning off various medications, they are not directly related

2. Which type of PDPH is associated with a prior history of migraines?

- A. Primary**
- B. Secondary
- C. Chronic
- D. Post-surgical

The type of post-dural puncture headache (PDPH) that is associated with a prior history of migraines is referred to as primary PDPH. This type is characterized by more typical headache features and can often exacerbate individuals who have a predisposition to migraines, making their experience of PDPH more pronounced. Primary PDPH is generally attributed to changes in intracranial pressure following dural puncture, which may trigger a headache in susceptible individuals. For those with a history of migraines, their headache patterns may overlap or worsen with the development of PDPH, resulting in increased severity and prolonged symptoms. Understanding the distinction is important because management and treatment approaches may differ based on the individual's headache history and the characteristics of their PDPH. In contrast, secondary PDPH often arises from other underlying medical conditions, chronic PDPH refers to headaches persisting for longer durations post-procedure, and post-surgical headaches can be attributed to various factors related to the surgical intervention itself rather than the dural puncture specifically.

3. How does an increase in mean arterial pressure (MAP) help protect the spinal cord?

- A. It increases peripheral resistance to blood flow
- B. It enhances overall cardiac output
- C. It supports spinal cord perfusion by improving blood flow**
- D. It decreases intracranial pressure directly

An increase in mean arterial pressure (MAP) is vital for protecting the spinal cord because it ensures adequate perfusion, ultimately facilitating proper oxygen and nutrient delivery to the spinal tissues. The spinal cord relies heavily on consistent and sufficient blood flow to maintain its function and integrity. When MAP rises, it enhances the pressure gradient that drives blood flow through the spinal arteries, thereby improving spinal cord perfusion. This is particularly important during situations where spinal cord blood flow may be compromised, such as during hypotension or significant hemodynamic changes. Adequate MAP is crucial for maintaining the viability of spinal cord neurons by preventing ischemic conditions that could lead to cellular injury or necrosis. The other options may seem relevant but do not directly explain how increased MAP specifically benefits spinal cord perfusion. For instance, while enhanced cardiac output may contribute to blood flow increases, without the context of MAP, it doesn't highlight the pivotal nature of maintaining adequate pressure levels for specific perfusion of the spinal cord. Similarly, increasing peripheral resistance can affect overall blood flow dynamics but might not directly correlate with improved blood flow to the spinal cord. Therefore, the most accurate answer that directly addresses the question is that an increase in MAP supports spinal cord perfusion by improving blood flow.

4. Where is grafting of the circumflex artery usually performed?

- A. To the anterior descending artery
- B. To the marginal branches of the circumflex**
- C. To the right coronary artery
- D. To the left main coronary artery

Grafting of the circumflex artery is typically performed to the marginal branches of the circumflex artery. The circumflex artery is one of the main arteries that supply blood to the heart, particularly the left atrium and the lateral and posterior portions of the left ventricle. When performing coronary artery bypass grafting (CABG), surgeons often direct grafts to the marginal branches to restore blood flow to areas that may be compromised due to blockage or narrowed vessels. This approach optimizes the blood supply to the myocardium (heart muscle) particularly when the main vessel itself (circumflex artery) is diseased. Utilizing grafts to the marginal branches allows for effective revascularization of the areas supplied by the circumflex without redirecting blood flow from other critical coronary arteries, thereby preserving the overall function of the heart.

5. Which complication is associated with anesthesia dolorosa?

- A. Pain in an area that lacks sensation**
- B. Severe acute pain with hyperalgesia
- C. Acute neuropathic pain
- D. Persistent inflammation

Anesthesia dolorosa is characterized by the presence of pain in a region where there is a loss of normal sensory perception, particularly in cases where there has been nerve injury or disruption. This condition manifests as paradoxical pain in areas that should be numb due to anesthesia or nerve damage. The correct answer highlights the unique phenomenon of experiencing pain despite the absence of sensation in that area, which is a hallmark of anesthesia dolorosa. This discrepancy arises from changes in the pain pathways and the way the nervous system processes pain signals, leading to a state where pain is experienced even when sensation is diminished or absent. The other options describe different types of pain, but they do not specifically reflect the pain characteristics associated with anesthesia dolorosa. Understanding this condition is crucial in managing patients who have had nerve injuries or surgeries that might lead to altered sensory perceptions.

6. What effect does a large amount of blood have on the oxygen-hemoglobin curve?

- A. Right shift due to high 2,3 BPG
- B. Left shift due to low 2,3 BPG**
- C. No effect on the curve
- D. Increased oxygen release to tissues

The oxygen-hemoglobin dissociation curve illustrates the relationship between the partial pressure of oxygen and hemoglobin saturation. A left shift in this curve signifies increased hemoglobin affinity for oxygen, which can occur due to various factors such as lower levels of 2,3-bisphosphoglycerate (2,3 BPG). When there is a large amount of blood, particularly in the context of transfusion or increased blood volume, the concentration of 2,3 BPG may decrease. 2,3 BPG is an important regulator of hemoglobin's affinity for oxygen; it stabilizes the deoxygenated form of hemoglobin, promoting oxygen release to tissues. Therefore, a decrease in 2,3 BPG would result in a leftward shift of the curve, indicating that hemoglobin holds onto oxygen more tightly and thus diminishes the oxygen release to the tissues. In this scenario, the large volume of blood could also complicate other factors influencing the curve, but the decrease in 2,3 BPG is a significant reason for the left shift. This shift has clinical implications, as it may lead to insufficient oxygen delivery to tissues, especially in circumstances where oxygen demand is increased. Understanding the dynamics of the oxygen-hem

7. Which of the following ignition sources is commonly recognized in surgical settings?

- A. Electric scalpel
- B. Surgical laser**
- C. Electrocautery
- D. Scissors

In surgical settings, surgical lasers are recognized as significant ignition sources primarily due to their ability to produce high-energy light that can ignite flammable materials, especially in the presence of oxygen. Surgical lasers, which include CO₂ lasers and Nd:YAG lasers, emit concentrated beams of light that can inadvertently ignite surgical drapes, towels, and other combustible materials used during procedures. While electric scalpels, electrocautery devices (which are also known as diathermy), and scissors can pose risks for thermal injury or inadvertent cutting of tissues, they are typically not categorized as ignition sources in the same way that lasers are. The unique mechanism by which lasers operate—concentrated light energy with the potential for causing ignition—makes them particularly noteworthy in discussions about fire hazards in the operating room. Awareness of this risk is crucial for surgical teams, who need to implement fire safety protocols, such as ensuring flammable materials are kept away from the surgical field when lasers are in use. Understanding these ignition sources is important for preventing surgical fires and ensuring patient safety.

8. When does vasospasm typically peak after a subarachnoid hemorrhage (SAH)?

- A. Between days 1-3
- B. Between days 3-5
- C. Between days 6-10**
- D. Between days 11-14

Vasospasm after a subarachnoid hemorrhage (SAH) is a significant complication that can lead to delayed cerebral ischemia. This phenomenon typically peaks between days 6 to 10 following the hemorrhage. The reason this time frame is critical lies in the pathophysiological processes that occur after the initial bleed. In the days immediately following a SAH, inflammation and the formation of a blood clot in the subarachnoid space can lead to irritative processes that stimulate smooth muscle contraction in the cerebral arteries. Although vasospasm can begin earlier, it is during the window of days 6 to 10 that the risk is maximally increased. This peak is associated with the presence of hemolyzed blood and the resultant release of inflammatory mediators that sustain spasm in the vascular structures. Understanding this timing is essential for monitoring patients after SAH, as intervention strategies to prevent or treat vasospasm, such as the use of nimodipine or endovascular techniques, can be implemented effectively during this peak period.

9. What is the first step to take when malignant hyperthermia is suspected?

- A. Notify the nurse
- B. Stop the surgical procedure**
- C. Start cooling the patient
- D. Administer anesthetic reversal

When malignant hyperthermia is suspected, the first step to take is to stop the surgical procedure. This is essential because malignant hyperthermia is a life-threatening reaction to certain anesthetic agents that can lead to rapid increases in body temperature and severe metabolic disturbances. Immediate cessation of all triggering agents and the surgical stimuli allows for the intervention to focus on stabilization of the patient's condition. Stopping the procedure also prevents further complications that could arise from continued surgical stress. Once the procedure is halted, the next steps would include administering dantrolene, initiating cooling measures, and managing other associated problems like acidosis and electrolyte imbalances. Prompt action is crucial in managing malignant hyperthermia effectively, and halting the surgical procedure is the tactically sound initial approach.

10. Which factor is NOT affected by cold temperatures during surgery?

- A. Coagulation factor function
- B. Platelet aggregation
- C. Fibrinogen levels**
- D. Fibrinolysis

Fibrinogen levels are generally not directly influenced by cold temperatures during surgery. While cold conditions can affect the overall physiology of the body and various components of the coagulation cascade, fibrinogen levels themselves typically remain stable. This stability is crucial because fibrinogen is a key protein that plays a role in the formation of blood clots; it is synthesized in the liver and serves as a precursor to fibrin. In contrast, factors such as coagulation factor function, platelet aggregation, and fibrinolysis are all negatively impacted by hypothermia. Cold temperatures can lead to a decreased enzymatic activity of coagulation factors, impair platelet function, and promote the premature activation of fibrinolysis, which can complicate surgical procedures by increasing the risk of bleeding. Therefore, maintaining normothermia is important to ensure optimal hemostatic function and reduce complications during and after surgery.

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://anesthesiaakt24.examzify.com>

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

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