# Flight Paramedic Certification Practice Exam (Sample)

## Study Guide


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# Questions

**1. When is it acceptable to not wear a seatbelt during flight?**

- **A. During takeoff only**
- **B. In turbulent conditions**
- **C. When instructed by the PIC**
- **D. During landing only**

**2. What is the recommended dosing for Propofol?**

- **A. 0.5 mg/kg**
- **B. 1.0 mg/kg**
- **C. 1.5 mg/kg**
- **D. 2.0 mg/kg**

**3. What defines Assist-control ventilation (AC) mode in ventilators?**

- **A. Patient can initiate breaths but has restricted tidal volume**
- **B. Only the machine can initiate breaths at a set rate**
- **C. Patient can initiate and the machine can provide full tidal volume**
- **D. Used only for patients with no respiratory drive**

**4. What is the primary concern of Crew Resource Management in military operations?**

- **A. Reducing costs**
- **B. Involving all team members in mission planning**
- **C. Enhancing individual skills**
- **D. Increasing flight speeds**

**5. Which sign is assessed by observing the response of a patient's big toe and toes when the sole of the foot is stroked?**

- **A. Kernig's Sign**
- **B. Brudzinski's Sign**
- **C. Babinski's Sign**
- **D. Steeple Sign**

**6. What should you NOT administer alongside Dantrolene Sodium?**

**A. Beta blockers**

**B. Calcium channel blockers**

**C. Sodium bicarbonate**

**D. Antibiotics**

**7. At what altitude does the Space Equivalent Zone occur?**

**A. Above 10,000 ft MSL**

**B. Above 20,000 ft MSL**

**C. Above 30,000 ft MSL**

**D. Above 50,000 ft MSL**

**8. What is a noted duration of action for Fentanyl?**

**A. 15-30 mins**

**B. 30-45 mins**

**C. 45-60 mins**

**D. 60-90 mins**

**9. Which ABG value primarily reflects the effectiveness of ventilation?**

**A. pH**

**B. $PaCO_2$**

**C. $HCO_3$**

**D. $SaO_2$**

**10. What kind of condition is often associated with Kussmaul's respirations?**

**A. Obstructive sleep apnea**

**B. Pneumonia**

**C. Acidosis from diabetes mellitus**

**D. Chronic bronchitis**

# Answers

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

# Explanations

## 1. When is it acceptable to not wear a seatbelt during flight?

**A. During takeoff only**

**B. In turbulent conditions**

**C. When instructed by the PIC**

**D. During landing only**

**Wearing a seatbelt in a flight environment is critical for safety, as it helps prevent injury during turbulence, takeoffs, and landings. The correct situation in which it may be acceptable not to wear a seatbelt is when instructed by the Pilot in Command (PIC). The PIC has the authority and responsibility for the safety of the aircraft and its occupants, and their directives take precedence over standard procedures in specific circumstances. For instance, if the PIC deems it safe to remove seatbelts for a particular reason—such as performing a necessary medical intervention or managing patient care more effectively—they can give an instruction to do so. This reflects their situational awareness and the understanding of the current flight conditions. In any situation where seatbelt use may be altered, adherence to the PIC's instructions ensures that decisions are based on the unique conditions of that moment. In contrast, wearing a seatbelt during takeoff and landing is essential due to the high likelihood of abrupt movements or changes in altitude, which can pose significant risks. Likewise, in turbulent conditions, seatbelt use is a vital safety measure to protect all passengers and crew, regardless of the circumstances. Therefore, the emphasis on the PIC's authority for deciding when seatbelts may be removed highlights the**

## 2. What is the recommended dosing for Propofol?

**A. 0.5 mg/kg**

**B. 1.0 mg/kg**

**C. 1.5 mg/kg**

**D. 2.0 mg/kg**

**The recommended dosing for Propofol in the context of induction for anesthesia is typically around 1.5 to 2.5 mg/kg in adults, with 1.5 mg/kg often cited as a standard starting point. Propofol is a short-acting sedative-hypnotic agent that is commonly used for induction and maintenance of general anesthesia, as well as for sedation in various clinical settings. The choice of 1.5 mg/kg is considered effective for achieving the desired level of sedation or anesthesia quickly, while also balancing the potential for side effects. Given that Propofol's effects can be enhanced or diminished by patient factors such as age, weight, and overall health, this dosage helps establish a safe and effective means of achieving the desired sedation level while monitoring the patient closely for tolerance or adverse reactions. Proper titration is key, and clinicians often adjust the dosage based on the patient's response. Thus, this dosage aligns well with clinical practice and guidelines, making it a reasonable choice for inducing anesthesia in many patients.**

## 3. What defines Assist-control ventilation (AC) mode in ventilators?

**A. Patient can initiate breaths but has restricted tidal volume**

**B. Only the machine can initiate breaths at a set rate**

**C. Patient can initiate and the machine can provide full tidal volume**

**D. Used only for patients with no respiratory drive**

**Assist-control ventilation (AC) mode is characterized by the capability for patients to initiate breaths while ensuring that the ventilator can deliver a full tidal volume for each breath, regardless of whether it is initiated by the patient or the machine. This mode allows for better synchronization with patient efforts and provides support by ensuring adequate ventilation. When a patient initiates a breath, the ventilator responds by supplying a complete, predetermined tidal volume. This feature is particularly beneficial for patients who may have variable respiratory drive or are unable to maintain adequate ventilation on their own, as the system guarantees that they will receive sufficient ventilation support. This mode enhances patient comfort and can help prevent respiratory fatigue, making it suitable for patients who still retain some respiratory function but require assistance to maintain adequate ventilation. Such aspects differentiate this mode substantially from other ventilation strategies that may limit tidal volume or rely solely on mechanical control without patient input.**

## 4. What is the primary concern of Crew Resource Management in military operations?

**A. Reducing costs**

**B. Involving all team members in mission planning**

**C. Enhancing individual skills**

**D. Increasing flight speeds**

**The primary concern of Crew Resource Management (CRM) in military operations focuses on involving all team members in mission planning. Effective CRM emphasizes the importance of collaboration, communication, and coordination among all personnel involved in a mission. By including every team member in the planning process, it ensures that diverse perspectives and experiences contribute to a comprehensive understanding of the mission objectives and challenges. This involvement fosters a culture of teamwork and situational awareness, which is critical in high-stakes environments like military operations. Engagement in mission planning allows team members to share insights, voice concerns, and make informed decisions collectively, ultimately enhancing overall mission effectiveness. This collaborative approach can lead to improved decision-making, better risk management, and greater operational success, which are essential components of effective military operations.**

## 5. Which sign is assessed by observing the response of a patient's big toe and toes when the sole of the foot is stroked?

**A. Kernig's Sign**

**B. Brudzinski's Sign**

**C. Babinski's Sign**

**D. Steeple Sign**

**The sign assessed by observing the response of a patient's big toe and other toes when the sole of the foot is stroked is known as Babinski's Sign. This neurological reflex is evaluated by applying a stimulus along the lateral aspect of the sole, starting from the heel and moving towards the toes. In a typical response, especially in infants, the big toe will extend upward and the other toes may fan out. In adults, a positive Babinski's Sign, where the big toe extends instead of flexes, can be indicative of neurological damage, specifically within pathways originating from the brain that control reflexes. Understanding Babinski's Sign is important for assessing neurological function. Its presence in adults may suggest conditions such as spinal cord injury, multiple sclerosis, or other central nervous system disorders. Recognizing the implications of this sign plays a vital role in identifying potential issues that need further investigation or immediate intervention in a medical setting.**

## 6. What should you NOT administer alongside Dantrolene Sodium?

**A. Beta blockers**

**B. Calcium channel blockers**

**C. Sodium bicarbonate**

**D. Antibiotics**

**When considering what should not be administered alongside Dantrolene Sodium, it is crucial to understand the pharmacological interactions involved. Dantrolene is a muscle relaxant primarily used for treating conditions such as malignant hyperthermia. It acts at the muscle cell level to inhibit calcium release from the sarcoplasmic reticulum, leading to muscle relaxation. Calcium channel blockers should be avoided with Dantrolene because they both interact with calcium signaling within the muscle tissue. Using them together could potentially lead to an additive effect that exacerbates muscle relaxation, resulting in severe hypotension or cardiovascular instability. The use of these two classes of medications concurrently can significantly affect calcium homeostasis in the body, which can be dangerous, especially in an emergent situation. Understanding the impact of each medication and their mechanisms of action is essential for safe practice in a pre-hospital or flight paramedic environment.**

## 7. At what altitude does the Space Equivalent Zone occur?

**A. Above 10,000 ft MSL**

**B. Above 20,000 ft MSL**

**C. Above 30,000 ft MSL**

**D. Above 50,000 ft MSL**

**The Space Equivalent Zone is recognized as occurring above an altitude of 50,000 feet Mean Sea Level (MSL). At this altitude, the atmospheric pressure is significantly reduced, leading to a decrease in oxygen availability, which can result in hypoxia if supplemental oxygen is not used. This altitude also presents unique physiological challenges that affect the human body, requiring specific equipment and training for those who operate within this region. The conditions here simulate aspects of space flight, where life support systems, including oxygen delivery, become critical due to the extreme environment. Understanding this altitude is crucial for flight medics and others in the aviation and aerospace fields, as it determines the level of risk and the necessary precautions to ensure the safety and well-being of individuals operating in these high-altitude situations.**

## 8. What is a noted duration of action for Fentanyl?

**A. 15-30 mins**

**B. 30-45 mins**

**C. 45-60 mins**

**D. 60-90 mins**

**Fentanyl is an opioid analgesic that is known for its rapid onset and relatively short duration of action. The duration of action for intravenous fentanyl typically ranges around 30 to 60 minutes, depending on the patient's unique metabolism and the dosage administered. This makes it ideal for procedural sedation and pain management in pre-hospital settings, where a swift onset is necessary, but we also need to be aware of when its effects will taper off. The choice that indicates 45-60 minutes aligns best with the pharmacokinetics of fentanyl when used in the field. It provides an appropriate timeframe for medical personnel to monitor the patient's response and manage further analgesia or sedation as required. By understanding the duration of action, healthcare providers can plan for subsequent doses or alternative medications effectively while ensuring patient safety.**

## 9. Which ABG value primarily reflects the effectiveness of ventilation?

**A. pH**

**B. PaCO2**

**C. HCO3**

**D. SaO2**

**The value that primarily reflects the effectiveness of ventilation is the partial pressure of carbon dioxide in arterial blood, known as PaCO2. This measurement indicates how well carbon dioxide is being expelled from the body during respiration. Effective ventilation ensures that carbon dioxide is removed efficiently; therefore, higher levels of PaCO2 may suggest inadequate ventilation, while lower levels typically indicate effective ventilation. Changes in PaCO2 can significantly influence the body's pH balance and overall acid-base status. If ventilation is inadequate, carbon dioxide accumulates in the bloodstream, leading to respiratory acidosis, which can be detected by elevated PaCO2 levels. Conversely, excessive ventilation can lead to respiratory alkalosis, reflected by lowered levels of PaCO2. In contrast, while pH provides information about the acid-base balance and can be affected by ventilation, it is not a direct measurement of ventilation effectiveness. Bicarbonate (HCO3) serves more as a metabolic indicator rather than a direct measure of ventilation. Lastly, oxygen saturation (SaO2) reflects the oxygenation status of the blood but does not directly assess how well carbon dioxide is being removed from the body. Thus, PaCO2 stands out as the most relevant value for determining ventilation efficacy.**

## 10. What kind of condition is often associated with Kussmaul's respirations?

**A. Obstructive sleep apnea**

**B. Pneumonia**

**C. Acidosis from diabetes mellitus**

**D. Chronic bronchitis**

**Kussmaul's respirations are characterized by deep, labored breathing that occurs in response to severe metabolic acidosis, particularly in diabetic patients experiencing diabetic ketoacidosis (DKA). This type of abnormal breathing is the body's effort to compensate for the acidosis by increasing carbon dioxide elimination through hyperventilation, thereby attempting to correct the blood pH toward normal levels. In the context of diabetes mellitus, when insulin levels are low or when there is an increase in counter-regulatory hormones due to stress or illness, the body begins to break down fats for energy, leading to the production of ketones. This results in a state of metabolic acidosis, prompting the body to initiate Kussmaul's respirations as a compensatory mechanism to counter the acidosis. Therefore, recognizing Kussmaul's respirations can be critical in diagnosing and managing patients with diabetic conditions, where timely intervention can prevent complications associated with acidosis. The other options present alternative respiratory or metabolic conditions but do not directly relate to Kussmaul's respirations in the context of metabolic acidosis.**