

# Program for the Assessment of Veterinary Education Equivalence (PAVE) Practice Exam (Sample)

## Study Guide



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**SAMPLE**

## **Questions**

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- 1. What serious reactions may occur due to a transfusion error in cats from Type A to Type B?**
  - A. Acute transfusion reaction and organ failure**
  - B. Decreased RBC lifespan and PCV drops**
  - C. Hemolytic reaction with no significant outcome**
  - D. Type A transfused to Type B resulting in sudden death**
- 2. What is the clinical significance of Viborg's Triangle swelling?**
  - A. Indicates bacterial infection**
  - B. Indicates safe surgical access**
  - C. Sign of respiratory distress**
  - D. Indicates vertebral issues**
- 3. What hormones does the endometrium of a cow produce?**
  - A. Testosterone and insulin**
  - B. Prolactin and estrodoil**
  - C. Progesterone and cortisol**
  - D. Estrone and oxytocin**
- 4. Which structure is not palpable during a rectal examination in a healthy dog?**
  - A. Pelvic brim**
  - B. Prostate gland**
  - C. Colon**
  - D. Uterus**
- 5. What neurological symptom is indicative of suprascapular nerve damage?**
  - A. Weakness in hind limbs**
  - B. Loss of shoulder muscle mass**
  - C. Difficulty swallowing**
  - D. Loss of forelimb control**

- 6. With hyperparathyroidism, what are the expected levels of Calcium and Phosphorus?**
- A. Ca decreased, P increased**
  - B. Ca increased, P decreased**
  - C. Ca normal, P normal**
  - D. Ca increased, P increased**
- 7. Which clinical sign is indicative of acorn toxicity?**
- A. Vomiting**
  - B. Diarrhea**
  - C. Perirenal edema**
  - D. Sensitivity to light**
- 8. In cases of cardiac failure in dogs, what is the immediate action for a dyspneic dog with a murmur and ventral lung edema?**
- A. Administer diuretics**
  - B. Perform thoracocentesis**
  - C. Provide supplemental oxygen**
  - D. Start intravenous fluids**
- 9. What clinical signs are observed in a horse with laryngeal paralysis?**
- A. Coughing and exercise intolerance**
  - B. Difficulty swallowing and drooling**
  - C. Nasal discharge and fever**
  - D. Abnormal gait and reluctance to move**
- 10. Which organ system is primarily affected by Senecio in horses?**
- A. Liver**
  - B. Kidneys**
  - C. Heart**
  - D. Lungs**

## **Answers**

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

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## **Explanations**

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**1. What serious reactions may occur due to a transfusion error in cats from Type A to Type B?**

**A. Acute transfusion reaction and organ failure**

**B. Decreased RBC lifespan and PCV drops**

**C. Hemolytic reaction with no significant outcome**

**D. Type A transfused to Type B resulting in sudden death**

Transfusion errors, particularly in cats, can lead to severe and sometimes fatal consequences, especially when blood type incompatibility occurs. When Type A blood is transfused into a Type B cat, a strong immune response can be initiated due to the presence of anti-A antibodies in the Type B cat's blood, leading to acute hemolytic transfusion reactions. This reaction involves the destruction of the transfused Type A red blood cells by the recipient's immune system, resulting in the release of hemoglobin and various inflammatory mediators. The acute transfusion reaction can trigger a cascade of events, including blood vessel inflammation and the potential development of disseminated intravascular coagulation (DIC). These effects can culminate in organ failure due to the loss of functional red blood cells, tissue oxygen deprivation, and acute shock. Therefore, the correct response encompasses both the immediate and serious outcomes of such a transfusion error, which includes the risk of organ failure as a critical and life-threatening situation for the animal. The knowledge about how severe acute transfusion reactions can be highlights the importance of proper blood typing and compatibility testing before any transfusion in veterinary practice, particularly in species like cats that have strong reactions to blood type mismatches.

**2. What is the clinical significance of Viborg's Triangle swelling?**

**A. Indicates bacterial infection**

**B. Indicates safe surgical access**

**C. Sign of respiratory distress**

**D. Indicates vertebral issues**

Viborg's Triangle is a specific anatomical area located in the region of the jugular furrow and is formed by the sternocephalicus muscle, the mandible, and the lingual muscle. This area is clinically significant because swelling in Viborg's Triangle often indicates the presence of a condition that warrants surgical intervention. When swelling occurs in this area, it typically suggests the possibility of an abscess or other mass effect that can lead to complications if not addressed. The importance of recognizing Viborg's Triangle for safe surgical access is paramount; it allows veterinarians to navigate nearby structures while minimizing the risk of injury to critical vessels and nerves in the neck. Awareness of this anatomical landmark helps ensure that procedures such as draining abscesses or performing surgical interventions are done safely and effectively, reducing potential complications for the animal. In contrast, swelling in this area is not a definitive indicator of bacterial infection, nor is it directly associated with respiratory distress or vertebral issues. Instead, it signifies the need for careful anatomical consideration when planning surgical procedures in this region. This understanding reinforces the relevance of recognizing Viborg's Triangle as a guide for safe surgical access.

### 3. What hormones does the endometrium of a cow produce?

- A. Testosterone and insulin
- B. Prolactin and estradiol**
- C. Progesterone and cortisol
- D. Estrone and oxytocin

The endometrium of a cow primarily produces hormones that are crucial for reproductive processes, particularly during and after pregnancy. Among these hormones, estradiol plays a significant role in the estrous cycle and the maintenance of pregnancy. Prolactin is also important; it supports lactation and helps to prepare the body for nurturing offspring after birth. The interplay of these hormones is essential for the regulation of the reproductive cycle and for ensuring successful gestation and lactation. Estradiol, produced in the ovaries and also by the endometrium in response to certain signals, helps regulate the development of the uterine lining, promoting an environment conducive to implantation. Meanwhile, prolactin has a direct role in stimulating milk production and maternal behaviors, which are critical once a calf is born. In contrast, the other hormone pairs listed in the incorrect options do not directly relate to the primary functions of the endometrium. For instance, testosterone is largely associated with male reproductive functions, while insulin is involved in glucose metabolism rather than reproductive processes. Similarly, while progesterone is essential for maintaining pregnancy, it is produced by the corpus luteum and not primarily by the endometrium itself. Cortisol is a steroid hormone primarily related to stress responses rather than

### 4. Which structure is not palpable during a rectal examination in a healthy dog?

- A. Pelvic brim**
- B. Prostate gland
- C. Colon
- D. Uterus

During a rectal examination in a healthy dog, the pelvic brim is not palpable. The pelvic brim is the bony structure that forms the boundary between the abdominal cavity and the pelvic cavity. It is located above the level of the rectum and cannot be felt through rectal palpation, as it is not accessible through the tissues of the rectal wall. In contrast, the prostate gland, colon, and uterus are all structures that can be palpated during a rectal examination. The prostate gland is located near the rectum and can be felt readily in male dogs. The colon, being a portion of the intestines, is also located within reach during this examination, allowing for assessment of its contents and potential abnormalities. In females, the uterus can also be palpated, particularly if there are any notable changes such as enlargement due to pregnancy or pathology. Thus, the pelvic brim is the only structure listed that would not be detected during a rectal examination of a healthy dog.

**5. What neurological symptom is indicative of suprascapular nerve damage?**

- A. Weakness in hind limbs**
- B. Loss of shoulder muscle mass**
- C. Difficulty swallowing**
- D. Loss of forelimb control**

The presence of loss of shoulder muscle mass is indicative of suprascapular nerve damage. The suprascapular nerve innervates the supraspinatus and infraspinatus muscles, which are crucial for stabilizing the shoulder joint and enabling proper movement of the forelimb. When the suprascapular nerve is compromised, these muscles can atrophy due to disuse, leading to noticeable muscle wasting around the shoulder area. This muscle mass loss may not immediately result in weakness or difficulty in forelimb control, as those symptoms may take time to manifest depending on the extent of the nerve damage. However, the atrophy that occurs as a direct result of the nerve damage is often one of the earliest signs observed, as the muscle fibers begin to degenerate without proper nerve stimulation and usage. On the contrary, other options like weakness in hind limbs or difficulty swallowing do not correlate with suprascapular nerve injury, as those symptoms would suggest issues with different nerves or areas of the nervous system. Therefore, the specific link between shoulder muscle mass reduction and suprascapular nerve damage solidifies the validity of this answer.

**6. With hyperparathyroidism, what are the expected levels of Calcium and Phosphorus?**

- A. Ca decreased, P increased**
- B. Ca increased, P decreased**
- C. Ca normal, P normal**
- D. Ca increased, P increased**

In cases of hyperparathyroidism, the parathyroid glands produce excessive amounts of parathyroid hormone (PTH). This hormone plays a critical role in regulating calcium and phosphorus levels in the body. An increase in PTH typically results in elevated calcium levels due to increased bone resorption, enhanced renal tubular reabsorption of calcium, and increased intestinal absorption of calcium from the gastrointestinal tract. In conjunction with the rise in calcium levels, phosphorus levels often decrease as PTH also promotes renal excretion of phosphate. The increased calcium and decreased phosphorus levels are characteristic of primary hyperparathyroidism in particular. Thus, the correct association for hyperparathyroidism is elevated calcium levels accompanied by decreased phosphorus levels, making this choice the valid answer. Understanding the pathophysiology and hormonal influences behind these changes is crucial for interpreting laboratory results in the context of hyperparathyroidism.

**7. Which clinical sign is indicative of acorn toxicity?**

- A. Vomiting**
- B. Diarrhea**
- C. Perirenal edema**
- D. Sensitivity to light**

Acorn toxicity, primarily associated with the ingestion of acorns by livestock such as cattle and sheep, leads to specific clinical signs due to the presence of tannins and other compounds in the acorns that can cause kidney damage. One of the hallmark signs of this toxicity is perirenal edema, which refers to the accumulation of fluid around the kidneys. This condition occurs as a result of the direct nephrotoxic effects of acorn ingestion, leading to kidney inflammation, damage, and subsequent fluid retention in the perirenal space. While vomiting, diarrhea, and sensitivity to light can also be associated with other forms of toxicity or gastrointestinal disturbances, they are not specifically indicative of acorn toxicity. Perirenal edema distinctly reflects the renal compromise that occurs as a consequence of acorn consumption, making it the most relevant clinical sign in this context. Understanding this helps in the diagnosis and management of acorn toxicity in affected animals.

**8. In cases of cardiac failure in dogs, what is the immediate action for a dyspneic dog with a murmur and ventral lung edema?**

- A. Administer diuretics**
- B. Perform thoracocentesis**
- C. Provide supplemental oxygen**
- D. Start intravenous fluids**

In cases of cardiac failure, a dyspneic dog presenting with a murmur and ventral lung edema indicates a significant pulmonary congestion, likely due to heart failure. The immediate action should be to relieve the respiratory distress and fluid accumulation. Performing thoracocentesis is particularly effective in this scenario because it allows for the removal of excess fluid in the pleural space if pleural effusion is contributing to respiratory distress. By reducing the pressure in the thoracic cavity, thoracocentesis can facilitate breathing and improve oxygenation. Additionally, while providing supplemental oxygen is crucial in supporting the dog's breathing and ensuring adequate tissue oxygenation, it does not directly address the underlying issue of fluid accumulation that is impairing respiratory function. Administering diuretics can help manage fluid overload, but their effects are not immediate; they take time to work. Starting intravenous fluids is counterintuitive in cases of cardiac failure where fluid overload is often a problem. Therefore, thoracocentesis is typically the most urgent and effective immediate action to alleviate respiratory distress in this specific context.

**9. What clinical signs are observed in a horse with laryngeal paralysis?**

- A. Coughing and exercise intolerance**
- B. Difficulty swallowing and drooling**
- C. Nasal discharge and fever**
- D. Abnormal gait and reluctance to move**

In a horse with laryngeal paralysis, the clinical signs primarily arise from the impaired function of the laryngeal muscles, which can affect airflow during normal breathing, especially during exercise. Coughing and exercise intolerance are significant indicators of this condition. When laryngeal function is compromised, the horse may struggle to breathe effectively during exertion, leading to a reduced ability to perform physically and increased respiratory noise. Coughing can also occur as the horse attempts to clear its airways, further indicating a problem with the respiratory tract. These symptoms are vital to recognize, particularly in athletic horses, as they can directly impact performance and overall health. Understanding these signs helps veterinarians diagnose laryngeal paralysis and distinguish it from other conditions that may cause similar symptoms.

**10. Which organ system is primarily affected by Senecio in horses?**

- A. Liver**
- B. Kidneys**
- C. Heart**
- D. Lungs**

The liver is the primary organ system affected by Senecio species, commonly known as ragwort, in horses. These plants contain pyrrolizidine alkaloids, which are toxic compounds that can lead to severe liver damage when ingested. This liver toxicity manifests as hepatic fibrosis, which is a result of chronic liver injury. Clinical signs of Senecio poisoning can include weight loss, jaundice, and in severe cases, liver failure, which can be fatal. The liver plays a crucial role in metabolizing various substances, and when it's compromised, it can lead to systemic issues affecting multiple organ systems. However, the direct deleterious effects of Senecio toxicity are predominantly seen in the liver itself, making it the organ system most significantly impacted by exposure to this plant. Other organ systems, while they may be affected secondarily due to the liver's role in detoxification and metabolism, do not experience the primary toxic effects observed with Senecio exposure as the liver does.