# NOCTI Small Animal Science Practice Exam (Sample)

## Study Guide


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# Questions

**1. What type of disease is typically not transferred through casual contact?**

**A. Zoonotic diseases**

**B. Airborne diseases**

**C. Contagious diseases**

**D. Common cold**

**2. How many chromosomes do daughter cells have compared to the original cell after meiosis?**

**A. The same number**

**B. Half as many**

**C. Twice as many**

**D. None**

**3. Which of the following is true about handling small animals?**

**A. They should always be held high above the waist**

**B. They should be observed for signs of distress**

**C. They do not require special care**

**D. They can be held by any part of the body**

**4. Which of the following indicates the correct way to administer an injection intramuscularly?**

**A. Into the bloodstream**

**B. In the skin**

**C. In the muscle**

**D. In the fat**

**5. Which animal can be safely picked up by the tail?**

**A. A rat**

**B. A mouse**

**C. A hamster**

**D. A rabbit**

**6. How can pet owners provide for their pets' behavioral needs?**

**A. By providing suitable toys and regular exercise**

**B. By maintaining a strict feeding schedule**

**C. By limiting their interactions with people**

**D. By focusing solely on training commands**

**7. What does polyestrus mean?**

**A. A single heat cycle**

**B. Multiple heat cycles that do not end**

**C. Heat cycles that occur only in spring**

**D. No heat cycles at all**

**8. How do zoonotic diseases typically transfer?**

**A. Only human to human**

**B. Human to animal, animal to human, or animal to animal**

**C. Only animal to animal**

**D. Environmental to animal**

**9. What type of wound might result from a road rash?**

**A. Puncture**

**B. Laceration**

**C. Incision**

**D. Abrasion**

**10. When applying Robert's Rules of Order, what is the benefit of having an agenda?**

**A. Ensures decisions are made quickly**

**B. Helps in tracking financial spending**

**C. Facilitates organized discussions**

**D. Encourages social interactions**

# Answers

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

# Explanations

## 1. What type of disease is typically not transferred through casual contact?

**A. Zoonotic diseases**

**B. Airborne diseases**

**C. Contagious diseases**

**D. Common cold**

**Airborne diseases are transmitted when infectious agents are carried through the air via droplets or dust particles, typically when an infected person coughs, sneezes, or talks. This mode of transmission allows airborne diseases to spread without the need for direct or close physical contact between individuals, which is a distinctive characteristic. For instance, diseases like tuberculosis and measles can remain suspended in the air for a lengthy period, making them capable of infecting individuals who are in the vicinity of an infected person without any physical contact. In contrast, zoonotic diseases involve the transmission of infections from animals to humans and often require a more specific and usually direct way of transmission, such as bites or direct contact with infected animals or their secretions. Contagious diseases typically require close contact for transmission from one person to another, often through touching, sharing utensils, or other forms of direct physical interaction. Similarly, the common cold is also categorized as a contagious disease, primarily spread through close personal contact, touching infected surfaces, or inhaling respiratory droplets, which emphasizes the casual contact involved in its transmission.**

## 2. How many chromosomes do daughter cells have compared to the original cell after meiosis?

**A. The same number**

**B. Half as many**

**C. Twice as many**

**D. None**

**After meiosis, daughter cells have half the number of chromosomes compared to the original cell. This reduction occurs because meiosis is a specialized type of cell division that reduces the chromosome number in half, which is essential for sexual reproduction. In the original cell, known as a diploid cell, there are two sets of chromosomes—one set inherited from each parent. During meiosis, this diploid cell undergoes two rounds of division: meiosis I and meiosis II. In meiosis I, homologous chromosomes are separated into different daughter cells, halving the chromosome number. Following this, meiosis II separates the sister chromatids but does not alter the chromosome number again, since each daughter cell already contains half of the original's chromosomes. Ultimately, the result is four haploid daughter cells, each containing half the number of chromosomes compared to the original diploid cell. This reduction is crucial as it ensures that when fertilization occurs, the resulting zygote restores the full diploid condition, maintaining genetic continuity across generations.**

## 3. Which of the following is true about handling small animals?

**A. They should always be held high above the waist**

**B. They should be observed for signs of distress**

**C. They do not require special care**

**D. They can be held by any part of the body**

**Observing small animals for signs of distress is crucial during handling as it ensures the well-being of the animal. Stress indicators can include changes in body posture, vocalizations, or attempts to escape. Recognizing these signs allows handlers to respond appropriately, either by adjusting their handling technique or providing a more comfortable environment for the animal. This practice contributes to building trust between the handler and the animal, which can result in a safer handling experience for both. In contrast, while holding small animals at a certain height might seem practical, it can actually lead to stress or injury if not done carefully. Additionally, all animals require specific care tailored to their needs, meaning they should never be treated uniformly without consideration of their health and comfort. Holding an animal by any part of its body can also pose risks, as it may cause pain or discomfort and does not reflect best practices for safe and humane handling.**

## 4. Which of the following indicates the correct way to administer an injection intramuscularly?

**A. Into the bloodstream**

**B. In the skin**

**C. In the muscle**

**D. In the fat**

**Administering an intramuscular injection involves delivering medication directly into the muscle tissue. This method ensures that the medication is absorbed into the bloodstream effectively, as muscles have a rich blood supply. By injecting into the muscle, the medication can reach systemic circulation relatively quickly and is often used for vaccines, hormonal treatments, or certain medications that require a deeper delivery method compared to subcutaneous or intradermal injections. Understanding this technique is crucial for those working in small animal science, as it affects the efficacy of medications and the well-being of the animals being treated. Other methods, such as injecting into the bloodstream or fat or just under the skin, serve different purposes and can lead to complications if not performed correctly. Thus, choosing to inject into the muscle is the correct approach for the intended purpose of an intramuscular injection.**

## 5. Which animal can be safely picked up by the tail?

**A. A rat**

**B. A mouse**

**C. A hamster**

**D. A rabbit**

**The choice of a mouse as the correct answer highlights the fact that mice can be safely picked up by their tails due to their small size and the structure of their tails, which are designed to support their weight. When handled properly, lifting a mouse by the tail allows for safe and secure handling without causing harm. This technique is particularly useful in laboratory settings and when managing large numbers of these animals. In contrast, other animals listed are not typically handled by their tails. For example, rats, while somewhat similar, can sustain injury to their tails if handled improperly. Hamsters possess a thicker and more fragile structure, making tail handling potentially harmful. Rabbits have a very different anatomical structure, and handling them by the tail is not advisable, as it can lead to stress or injury. Proper handling techniques are crucial in ensuring the safety and well-being of small animals, highlighting the significance of understanding their specific needs and limitations.**

## 6. How can pet owners provide for their pets' behavioral needs?

**A. By providing suitable toys and regular exercise**

**B. By maintaining a strict feeding schedule**

**C. By limiting their interactions with people**

**D. By focusing solely on training commands**

**Providing for a pet's behavioral needs is crucial for their overall well-being and happiness. The correct choice emphasizes the importance of suitable toys and regular exercise in meeting these needs. Toys provide mental stimulation and encourage natural behaviors such as chewing, hunting, and playing, which can prevent boredom and destructive behavior. Regular exercise is equally important, as it helps manage energy levels, promotes physical health, and can alleviate anxiety and stress in pets. Engaging activities and social interaction through play contribute to a pet's emotional stability and enrich their environment. The other options do not adequately address the behavioral needs of pets. Maintaining a strict feeding schedule is more about nutritional needs than behavioral enrichment. Limiting interactions with people can lead to social isolation and behavioral issues, as animals need social interaction to thrive. Lastly, focusing solely on training commands neglects the importance of play and physical activity, which are essential for a pet's behavioral health. Overall, addressing both mental and physical stimulation through toys and exercise is essential for promoting a balanced and happy pet.**

## 7. What does polyestrus mean?

**A. A single heat cycle**

**B. Multiple heat cycles that do not end**

**C. Heat cycles that occur only in spring**

**D. No heat cycles at all**

**Polyestrus refers to a reproductive pattern in certain animals characterized by the occurrence of multiple estrous cycles within a single breeding season or throughout the year. This means that an animal that is polyestrus will experience several heat cycles, allowing for the possibility of multiple mating and breeding opportunities during that period. Animals that are polyestrus do not have a defined breeding season; instead, they can cycle continuously, which is advantageous for species that require flexibility and adaptability in their breeding strategies. For example, many domesticated animals, such as cows, are polyestrous, as they can breed at various times across the year without being restricted to a specific season. The other options refer to different reproductive strategies. A single heat cycle indicates a monoestrous condition, where an animal only goes into heat once per breeding season. Heat cycles that occur only in spring describe a seasonal breeding pattern, and the absence of heat cycles altogether refers to anestrus. Therefore, the understanding of polyestrus is crucial in veterinary science and animal husbandry, as it influences breeding management and reproductive health strategies.**

## 8. How do zoonotic diseases typically transfer?

**A. Only human to human**

**B. Human to animal, animal to human, or animal to animal**

**C. Only animal to animal**

**D. Environmental to animal**

**Zoonotic diseases are infections that are transmitted between animals and humans, which can occur through various pathways. The correct response highlights the multiple ways these diseases can be transferred: from human to animal, animal to human, or animal to animal. Animal to human transmission is a well-documented method, where humans can contract diseases directly from interactions with infected animals through bites, scratches, or consumption of contaminated animal products. Conversely, humans can also transmit diseases back to animals, which is relevant in cases where pets or livestock can become infected with diseases that humans carry. Moreover, diseases can spread among animal populations, which is critical in understanding how outbreaks can start and proliferate. This comprehensive approach to transmission reflects the interconnectedness of species and emphasizes the importance of monitoring health across both human and animal populations to prevent the spread of zoonotic diseases. Therefore, option B effectively encompasses the various transmission routes of zoonotic diseases, making it the most accurate choice.**

## 9. What type of wound might result from a road rash?

**A. Puncture**

**B. Laceration**

**C. Incision**

**D. Abrasion**

**The type of wound that results from a road rash is classified as an abrasion. An abrasion occurs when the skin is scraped off due to friction against a rough surface, which is exactly what happens in a road rash scenario. When an animal or human falls onto an abrasive surface, such as asphalt, the outer layer of skin is abraded away, leading to a superficial wound. This can often result in pain, bleeding, and potential risk for infection but does not penetrate deeply into the underlying tissues. In contrast, the other wound types have different characteristics: puncture wounds are caused by sharp objects piercing the skin, lacerations involve deep cuts with jagged edges, and incisions are clean, surgical cuts. Each of those types of wounds is formed under different circumstances, making them distinct from the scraping action that defines an abrasion like road rash.**

## 10. When applying Robert's Rules of Order, what is the benefit of having an agenda?

**A. Ensures decisions are made quickly**

**B. Helps in tracking financial spending**

**C. Facilitates organized discussions**

**D. Encourages social interactions**

**An agenda plays a crucial role in meetings governed by Robert's Rules of Order because it facilitates organized discussions. By outlining the topics to be addressed, the agenda ensures that all necessary issues are covered in a structured manner. This organization helps participants to prepare adequately for the meeting, promotes efficiency by keeping discussions focused, and allows for effective time management. Each item on the agenda can be addressed in a systematic way, minimizing the likelihood of digressions or chaotic debates. While other aspects such as making decisions quickly or tracking financial spending can be important in their own right, they are secondary benefits that may arise from having an organized discussion. Likewise, encouraging social interactions is often a byproduct of well-structured meetings, but it is not a primary purpose of an agenda within the context of Robert's Rules. Overall, the agenda serves as a guiding framework, allowing all participants to engage meaningfully and efficiently during the meeting.**