

Alabama High Performance Computing (HPC) Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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SAMPLE

Questions

- 1. What is the recommended method for controlling face flies and cluster flies overwintering within wall cavities?**
 - A. Remove all plants from the vicinity**
 - B. Seal cracks and use insecticides in wall voids**
 - C. Use only natural repellents**
 - D. Keep windows open throughout winter**
- 2. What is one of the species of fire ants mentioned?**
 - A. Black fire ant**
 - B. Southern fire ant**
 - C. Carpenter fire ant**
 - D. Yellow fire ant**
- 3. What is an effective method for managing bed bugs?**
 - A. Using mattress encasements**
 - B. Using outdoor sprays**
 - C. Using duct tape**
 - D. Using repellent plants**
- 4. What is the size of a flea?**
 - A. One eighth inch**
 - B. One sixteenth inch**
 - C. One quarter inch**
 - D. One half inch**
- 5. Where are bed bugs most likely to be found?**
 - A. In crawl spaces**
 - B. Close to their blood meal sources**
 - C. In attics**
 - D. Far from human habitats**
- 6. Pet owners are most likely to find which tick on their dogs, particularly around the head and ears?**
 - A. American dog tick**
 - B. Deer tick**
 - C. Wood tick**
 - D. Tick-borne tick**

- 7. Under what conditions should outdoor pesticide applications be avoided?**
- A. When temperatures are below freezing**
 - B. When the wind velocity exceeds three to four miles per hour**
 - C. During the middle of the day**
 - D. When it is cloudy**
- 8. Which statement about bats is true?**
- A. They are a type of rodent**
 - B. They are the only mammals capable of flight**
 - C. They primarily live in trees**
 - D. They are not affected by rabies**
- 9. What makes Atrivol useful in bird management programs?**
- A. Repels birds with odors**
 - B. Produces distress symptoms in affected birds**
 - C. Increases foraging efficiency in birds**
 - D. Traps birds without harming them**
- 10. How do American and Oriental cockroaches typically gain entry into buildings?**
- A. Through open windows and doors**
 - B. Through cracks, crevices, and openings**
 - C. By flying into the structures**
 - D. Through high ventilation systems**

Answers

SAMPLE

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

SAMPLE

Explanations

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1. What is the recommended method for controlling face flies and cluster flies overwintering within wall cavities?

- A. Remove all plants from the vicinity**
- B. Seal cracks and use insecticides in wall voids**
- C. Use only natural repellents**
- D. Keep windows open throughout winter**

The recommended method for controlling face flies and cluster flies that overwinter in wall cavities is to seal cracks and use insecticides in wall voids. This approach is effective because it addresses both the entry points where the flies can get into the walls and the existing populations within those spaces. Sealing cracks prevents the flies from entering the building and helps to eliminate potential breeding sites. Insecticides can be applied in the wall voids to target those flies that are already present, ensuring that any overwintering populations are effectively controlled. This two-pronged strategy minimizes the chances of infestations during the warmer months when these insects typically emerge. The other options do not provide a comprehensive approach to managing these pests. Simply removing plants may not significantly impact the presence of flies that have already entered the walls. Relying solely on natural repellents may not be sufficient to effectively manage an established infestation. Keeping windows open throughout winter could actually facilitate further entry of flies into the building instead of preventing it. Thus, the method of sealing and applying insecticides stands out as the most effective means of control.

2. What is one of the species of fire ants mentioned?

- A. Black fire ant**
- B. Southern fire ant**
- C. Carpenter fire ant**
- D. Yellow fire ant**

The southern fire ant is indeed recognized as a species of fire ant. It is known for its aggressive behavior and the painful sting it delivers, which is a characteristic trait of fire ants as a whole. This species is prevalent in the southern regions of the United States and adapts well to various environments, often forming large colonies that can impact local ecosystems. Understanding the specifics regarding the southern fire ant can provide insights into its behavior and habitat, important for studies on biodiversity as well as pest control measures in agricultural and urban settings. It helps illustrate the broader implications of fire ant species on both human activities and local wildlife.

3. What is an effective method for managing bed bugs?

A. Using mattress encasements

B. Using outdoor sprays

C. Using duct tape

D. Using repellent plants

Using mattress encasements is an effective method for managing bed bugs because it prevents the bugs from entering or escaping the mattress and box spring, creating a barrier that protects sleeping areas. Mattress encasements are specifically designed to be bed bug-proof, which means they have sealed seams and are made from materials that bed bugs cannot penetrate. This not only helps to contain any existing bed bug populations within the encased mattress but also aids in preventing new infestations from occurring. In contrast, outdoor sprays may not be effective against bed bugs as they are primarily indoor pests, and their presence is typically contained within living spaces. Duct tape, while useful in some situations for trapping certain insects, is not a practical long-term solution for managing a bed bug infestation. Similarly, while certain plants are known to repel insects, their efficacy against bed bugs specifically is limited and does not provide a reliable method for managing an infestation. Thus, the use of mattress encasements stands out as the most effective strategy in this context.

4. What is the size of a flea?

A. One eighth inch

B. One sixteenth inch

C. One quarter inch

D. One half inch

The size of a flea is typically around one-sixteenth of an inch in length, which aligns with the provided choice. Fleas are small, wingless insects belonging to the order Siphonaptera, and their tiny size allows them to adeptly maneuver through the fur or feathers of their hosts. This characteristic is essential for their survival and reproduction, as they need to remain close to their hosts to feed on blood while also avoiding detection. In contrast, options like one-eighth inch or one-quarter inch significantly overstate the size of a flea. These measurements imply larger dimensions than what is typical for these insects, which are generally described as being capable of fitting comfortably on a fingertip. The half-inch option is particularly far off, as it suggests a size more characteristic of a larger insect, not a flea. Therefore, the attention to detail regarding the usual size of a flea supports why one-sixteenth of an inch is the most accurate representation of their size among the choices given.

5. Where are bed bugs most likely to be found?

- A. In crawl spaces**
- B. Close to their blood meal sources**
- C. In attics**
- D. Far from human habitats**

Bed bugs are most likely found close to their blood meal sources because they are parasitic insects that rely on the blood of humans and other warm-blooded animals for nourishment. These pests are typically nocturnal, coming out to feed primarily when their hosts are asleep. Therefore, they tend to reside in areas where they can easily access people, such as in the seams of mattresses, bed frames, and in furniture close to beds. Their preference for living near their food source enhances their survival and reproductive success, allowing them to thrive in environments where humans reside. The other options do not reflect the behavior and habitat preferences of bed bugs. For instance, crawl spaces and attics are not ideal living conditions for these insects, as they require proximity to their hosts. Similarly, being far from human habitats would significantly reduce their access to blood meals, making it unlikely for them to establish a population in such areas.

6. Pet owners are most likely to find which tick on their dogs, particularly around the head and ears?

- A. American dog tick**
- B. Deer tick**
- C. Wood tick**
- D. Tick-borne tick**

The American dog tick is commonly found on dogs, particularly in areas around the head and ears. This tick species is known for its preference for feeding on pets and livestock and is often encountered in grassy and wooded areas. The tick's presence in these regions, coupled with a higher likelihood of dogs roaming in such environments, increases the chance of encounters. In contrast, the deer tick, while also a concern for pets, is more often associated with white-tailed deer and is primarily found in wooded or brushy areas. The wood tick, also known as the Rocky Mountain wood tick, tends to inhabit the western regions of the United States and is less common in pets in the southeastern states like Alabama. "Tick-borne tick" is not a recognized species but may refer to ticks that carry diseases; thus, it lacks specificity regarding the tick type concerned. These details underscore why the American dog tick is the most likely choice when considering which tick pet owners would find on their dogs, especially located around the head and ears.

7. Under what conditions should outdoor pesticide applications be avoided?

- A. When temperatures are below freezing**
- B. When the wind velocity exceeds three to four miles per hour**
- C. During the middle of the day**
- D. When it is cloudy**

Outdoor pesticide applications should be avoided when the wind velocity exceeds three to four miles per hour due to the potential for drift. Pesticide drift occurs when airborne particles of a pesticide are carried away from the target area by the wind, which can result in unintended exposure to non-target plants, animals, and humans. The movement of pesticides in the air can lead to ineffective pest control and pose environmental and health risks. Thus, ensuring calm wind conditions is crucial for both effective application and safety. The other conditions mentioned, while they may influence the effectiveness or safety of pesticide applications, do not present the same level of risk as high wind velocities. For example, temperatures below freezing might not be ideal for some pesticide formulations, but they do not inherently cause the same risk of drift. Similarly, applying pesticides in the middle of the day during peak sunlight may increase evaporation and reduce effectiveness, but it is not as critical a concern as wind conditions. Cloudy weather may actually help reduce evaporation, making it a less significant factor compared to the risks posed by wind.

8. Which statement about bats is true?

- A. They are a type of rodent**
- B. They are the only mammals capable of flight**
- C. They primarily live in trees**
- D. They are not affected by rabies**

Bats belong to the order Chiroptera and are indeed the only mammals capable of sustained flight. Their unique wing structure, which includes elongated fingers covered by a thin membrane of skin, enables them to maneuver through the air adeptly. This adaptation distinguishes them from all other mammals, making the claim that they are the only flying mammals accurate. Many mammals, including gliding mammals like flying squirrels, can move through the air, but they cannot achieve true powered flight like bats can. Understanding this characteristic is vital in recognizing the evolutionary adaptations that allow bats to thrive in various environments, including their role as pollinators and insect predators. This distinction also highlights why bats are categorized separately from other groups, such as rodents, which are not capable of flight. Other options do not hold true: bats are not rodents, they often roost in caves or man-made structures rather than primarily living in trees, and they can indeed be impacted by rabies, which is a significant health concern associated with them. These factors further solidify why the statement regarding their unique capability for flight is the most accurate.

9. What makes Atrivol useful in bird management programs?

- A. Repels birds with odors**
- B. Produces distress symptoms in affected birds**
- C. Increases foraging efficiency in birds**
- D. Traps birds without harming them**

The effectiveness of Atrivol in bird management programs primarily lies in its ability to produce distress symptoms in affected birds. This action makes it a useful tool, as it can help deter birds from specific areas without causing them physical harm. When birds experience these distress signals, they are likely to leave the area to avoid discomfort, which is beneficial in contexts such as protecting crops, airports, or areas where birds may pose a hazard or nuisance. While the other options may suggest strategies for bird management, they do not accurately describe the function of Atrivol. For example, repelling birds with odors might be effective in some scenarios, but Atrivol does not operate through olfactory deterrence. Similarly, increasing foraging efficiency or trapping birds without harm does not align with the primary mode of action that Atrivol employs, which focuses on creating a physiological response to dissuade birds from certain locations.

10. How do American and Oriental cockroaches typically gain entry into buildings?

- A. Through open windows and doors**
- B. Through cracks, crevices, and openings**
- C. By flying into the structures**
- D. Through high ventilation systems**

American and Oriental cockroaches are known for their ability to enter buildings through small spaces and openings. They are particularly adept at exploiting any cracks and crevices found in walls, foundations, and around doors or windows. This method of entry is effective for them due to their size and flexibility, allowing them to navigate areas that might seem inaccessible. The choice that emphasizes the importance of these physical openings highlights the cockroaches' behavior and biology. They tend to prefer cooler and darker environments, motivating them to seek out shelter in buildings, particularly in areas like basements or kitchens where food sources and moisture may be available. In contrast, while open windows and doors, flying, or using ventilation systems may seem plausible, these options do not capture the primary and most common behavior exhibited by these cockroaches when seeking entry into structures.