

Category B - Mosquito Biology and Control Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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. Which Aedes species breeds in irrigated pastures?**
 - A. Ae. melanimon, Ae. nigromaculis, Ae. vexans**
 - B. Ae. melanimon**
 - C. Ae. nigromaculis**
 - D. Ae. vexans**

- 2. Which Aedes species breed in snow pools?**
 - A. Ae. tahoensis**
 - B. Ae. melanimon**
 - C. Ae. taeniorynchus**
 - D. Ae. notoscriptus**

- 3. Which two species are associated with Jamestown Canyon virus?**
 - A. Ae. hexadontus, Ae. tahoensis**
 - B. Ae. albopictus, Ae. aegypti**
 - C. Ae. vexans, Ae. washinoi**
 - D. Ae. dorsalis, Ae. squamiger**

- 4. What are general characteristics of Culiseta?**
 - A. They feed on birds; diurnal biters; do not overwinter**
 - B. They feed on mammals and humans, nocturnal biters, overwinter as adults**
 - C. They feed on plants and do not bite**
 - D. They are exclusively freshwater breeders in streams**

- 5. Which statement best describes Cx. stigmatosoma's biting pattern and disease-vector status?**
 - A. They are day biters and do not transmit disease**
 - B. They are night biters and are vectors for WNV and SLE in birds**
 - C. They bite only animals other than humans**
 - D. They are diurnal and vector for malaria**

- 6. Which species is associated with rice fields and the Sac Valley?**
- A. An. freeborni**
 - B. An. hermsi**
 - C. An. punctipennis**
 - D. Ae. tahoensis**
- 7. What are the dog heartworm vectors?**
- A. Ae. notoscriptus, Ae. sierriensis**
 - B. Ae. tahoensis**
 - C. Ae. taeniorynchus**
 - D. Ae. vexans**
- 8. What is the equivalence of 1 tablespoon in teaspoons?**
- A. 3 teaspoons**
 - B. 2 teaspoons**
 - C. 4 teaspoons**
 - D. 1 teaspoon**
- 9. What are the characteristics of adult Anopheles?**
- A. Palpi as long as proboscis**
 - B. Palpi shorter than proboscis**
 - C. Palpi longer than proboscis**
 - D. Palpi absent**
- 10. What type of eggs are laid by Culex and Culiseta?**
- A. Single eggs that are desiccation resistant**
 - B. Single eggs with floats that are desiccation susceptible**
 - C. Egg rafts that are desiccation susceptible**
 - D. Desiccation resistant eggs**

Answers

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

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Explanations

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1. Which *Aedes* species breeds in irrigated pastures?

- A. *Ae. melanimon*, *Ae. nigromaculis*, *Ae. vexans***
- B. *Ae. melanimon***
- C. *Ae. nigromaculis***
- D. *Ae. vexans***

In this case, the main idea is how *Aedes* mosquitoes utilize agricultural water sources for larval development. Irrigated pastures create shallow, sunlit pools and ditches that persist between irrigation events, providing ideal standing-water habitats for certain *Aedes* species to lay eggs and for larvae to develop. The combination of *Ae. melanimon*, *Ae. nigromaculis*, and *Ae. vexans* is the best match because these species are commonly associated with irrigation-related habitats like pastures where water collects or stands temporarily. The other options point to individual species, but the question is asking which group is typically found breeding in irrigated pastures, and this trio collectively reflects that habitat association.

2. Which *Aedes* species breed in snow pools?

- A. *Ae. tahoensis***
- B. *Ae. melanimon***
- C. *Ae. taeniorynchus***
- D. *Ae. notoscriptus***

Breeding in snow pools is a habitat specialization seen in *Aedes* mosquitoes that occupy cold, ephemeral water sources formed by snowmelt in high elevations. This niche requires eggs that can survive freezing and larvae that develop quickly in cool, nutrient-poor water. *Ae. tahoensis* is the species known for breeding specifically in snow pools in the Sierra Nevada/Lake Tahoe region, aligning exactly with that alpine, snow-melt habitat. The other listed species are generally associated with more typical larval habitats—standard freshwater pools, streams, or man-made containers—and do not have the documented association with snow pools, so they don't fit this particular ecological niche as well.

3. Which two species are associated with Jamestown Canyon virus?

- A. *Ae. hexadontus*, *Ae. tahoensis***
- B. *Ae. albopictus*, *Ae. aegypti***
- C. *Ae. vexans*, *Ae. washinoi***
- D. *Ae. dorsalis*, *Ae. squamiger***

Jamestown Canyon virus is a California serogroup orthobunyavirus transmitted by mosquitoes in North America. The mosquitoes that truly link to this virus are the ones shown to naturally harbor it or experimentally transmit it, demonstrating their role in the virus's cycle. *Aedes hexadontus* and *Aedes tahoensis* have been identified in field studies as carriers of Jamestown Canyon virus and have also shown vector competence in laboratory settings, meaning they can acquire the virus, allow it to replicate, and pass it on through their bites. This combination of natural association and demonstrated transmission makes them the best fit for being the species associated with Jamestown Canyon virus. Other mosquito pairs listed are not as strongly supported by evidence as JCV vectors, or are better known for transmitting other viruses.

4. What are general characteristics of *Culiseta*?

- A. They feed on birds; diurnal biters; do not overwinter
- B. They feed on mammals and humans, nocturnal biters, overwinter as adults**
- C. They feed on plants and do not bite
- D. They are exclusively freshwater breeders in streams

Culiseta mosquitoes are known for feeding on mammals, including humans, and they tend to bite at night. They also have a tendency to survive winter in the adult stage in temperate regions, resuming activity when temperatures rise. This combination—nocturnal biting, an emphasis on mammalian/human hosts, and overwintering as adults—best fits the general behavior of this genus. The other descriptions don't align with these broad patterns, such as implying daytime feeding, plant-only feeding, or exclusive breeding in streams.

5. Which statement best describes *Cx. stigmatosoma*'s biting pattern and disease-vector status?

- A. They are day biters and do not transmit disease
- B. They are night biters and are vectors for WNV and SLE in birds**
- C. They bite only animals other than humans
- D. They are diurnal and vector for malaria

Cx. stigmatosoma typically bites at night, which is common for many *Culex* species. They can act as vectors for West Nile Virus and St. Louis Encephalitis in birds, meaning they help maintain and spread these viruses within avian populations (humans can be incidental hosts). Malaria is transmitted by *Anopheles* mosquitoes, not *Culex*, so the option claiming malaria transmission isn't correct. The idea that they only bite animals or that they are day biters doesn't fit the known behavior and vector role of this species.

6. Which species is associated with rice fields and the Sac Valley?

- A. *An. freeborni***
- B. *An. hermsi*
- C. *An. punctipennis*
- D. *Ae. tahoensis*

Species have preferred larval habitats, and rice-field environments in the Sacramento Valley provide the warm, standing water and abundant food that certain *Anopheles* mosquitoes need to complete their development. In this region, *Anopheles freeborni* is closely tied to cultivated rice fields, where irrigation ponds and flooded fields create reliable breeding sites throughout the growing season. This association with agricultural water management makes it the best fit for the Sac Valley rice-field context. The other species have different ecological preferences. *Anopheles hermsi* is more commonly linked to higher-elevation conifer forests rather than cultivated fields. *Anopheles punctipennis* has a broader range and can exploit various stagnant waters, but it's not the hallmark species tied specifically to rice paddies in the Sac Valley. *Aedes tahoensis* is an *Aedes* mosquito associated with different inland, often non-rice, habitats in northern California.

7. What are the dog heartworm vectors?

- A. Ae. notoscriptus, Ae. sierriensis**
- B. Ae. tahoensis**
- C. Ae. taeniorynchus**
- D. Ae. vexans**

Dog heartworm is spread when a mosquito serves as a vector, picking up microfilariae from an infected dog, letting them develop to the infective stage inside the mosquito, and then transmitting them to another dog during a later bite. Not all mosquitoes can do this effectively; only species that bite dogs and support the parasite's development become vectors. *Aedes notoscriptus* and *Aedes sierrensis* are documented vectors in the regions where they occur, meaning they both feed on dogs and provide the right conditions for *Dirofilaria immitis* to mature to the infective stage and be transmitted in a subsequent bite. This is why they're identified as dog heartworm vectors. Other species listed aren't established as primary heartworm vectors in the context of this question—either due to regional distribution, feeding habits, or lack of evidence showing they reliably support transmission—so they're not considered the vectors in this scenario.

8. What is the equivalence of 1 tablespoon in teaspoons?

- A. 3 teaspoons**
- B. 2 teaspoons**
- C. 4 teaspoons**
- D. 1 teaspoon**

The main idea is understanding kitchen measurement ratios. A tablespoon holds three times as much as a teaspoon, so 1 tablespoon equals 3 teaspoons. This fits the standard metric equivalents: 1 tablespoon is 15 milliliters and 1 teaspoon is 5 milliliters, giving a 3:1 ratio. Two teaspoons would be too little for a tablespoon, four would be more than a tablespoon, and one teaspoon is nowhere near the full tablespoon. The correct equivalence is three teaspoons.

9. What are the characteristics of adult Anopheles?

- A. Palpi as long as proboscis**
- B. Palpi shorter than proboscis**
- C. Palpi longer than proboscis**
- D. Palpi absent**

Adult *Anopheles* are identified by the length of their mouthparts: the palps are about as long as the proboscis. This means you'll see long palps roughly matching the length of the feeding tube. This contrasts with other mosquito genera, where the palps are noticeably shorter than the proboscis. So, when a resting mosquito shows palps roughly equal in length to the proboscis, it points to *Anopheles*. The other options don't fit because palpi longer than the proboscis is not typical for *Anopheles*, palpi absent isn't correct for mosquitoes, and palpi shorter than the proboscis is characteristic of other genera like *Culex* or *Aedes*.

10. What type of eggs are laid by Culex and Culiseta?

- A. Single eggs that are desiccation resistant**
- B. Single eggs with floats that are desiccation susceptible**
- C. Egg rafts that are desiccation susceptible**
- D. Desiccation resistant eggs**

Culex and Culiseta lay eggs in a floating raft on the water's surface. This raft is made up of many eggs glued together, and the eggs inside are not built to withstand long dry spells; they are desiccation susceptible and need an aquatic environment to hatch. This stands in contrast to some other mosquitoes whose eggs are laid singly and can resist desiccation for extended periods. So the description that best fits these genera is egg rafts that are desiccation susceptible.

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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://catbmosquitobioandcontrol.examzify.com>

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

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