SCIENCE OLYMPIAD ENTOMOLOGY PRACTICE EXAM (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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

1. Which family is known for a large pronotum extending over the abdomen and head?

A. Cicadellidae

B. Cercopidae

C. Fulgoridae

D. Membracidae

2. The forewing feature of three submarginal cells in the forewing form a bow-like shape in which family?

A. Sphecidae

B. Halictidae

C. Ixodidae

D. Sphingidae

3. Which family is known for leaf-like expansions on the metatibiae?

A. Tingidae

B. Coreidae

C. Gerridae

D. Cimicidae

4. Sphingidae larvae are commonly referred to as which of the following?

A. Hornworms

B. Sphinx moths

C. Hawk moths

D. Leafworms

5. Which wingspan is listed for Pyralidae?

A. Large (3-15 cm)

B. Small heads, hairy

C. Dark eyespots, hair like scales

D. 0.75-1.5 inch wingspan

6. Which family is commonly known as Whites and sulfurs?

A. Pieridae

B. Papilionidae

C. Hesperiidae

D. Nymphalidae

7. Which family is known as Whites and sulfurs and often has ultraviolet patterns for mating?

A. Papilionidae

B. Pieridae

C. Nymphalidae

D. Hesperiidae

8. Where are Staphylinidae commonly found?

A. In water

B. In litter, under rocks, ant nests

C. In tree canopies

D. In deserts

9. Which order has about 4000 described species?

A. Odonata

B. Orthoptera

C. Diptera

D. Lepidoptera

10. Which beetle family is commonly known as dung beetles?

A. Scarabaeidae

B. Passalidae

C. Buprestidae

D. Elateridae

Answers

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

Explanations

1. Which family is known for a large pronotum extending over the abdomen and head?

A. Cicadellidae

B. Cercopidae

C. Fulgoridae

D. Membracidae

In treehoppers, the pronotum—the plate that covers the first thoracic segment just behind the head—becomes greatly enlarged and extends over the body, sometimes looping over the abdomen and even the head. This creates the distinctive helmet-, thorn-, or plant-mimic shapes that define Membracidae. The feature isn't just for looks: it's a defense and camouflage strategy, helping individuals blend with twigs and plant structures to deter predators. Other families don't show this dramatic, helmet-like pronotum extension—the leafhoppers have a smaller, unobtrusive pronotum; spittlebugs' pronotum isn't extended in this way; lanternflies may have other striking features, but not the helmeted pronotum that characterizes Membracidae.

2. The forewing feature of three submarginal cells in the forewing form a bow-like shape in which family?

A. Sphecidae

B. Halictidae

C. Ixodidae

D. Sphingidae

Wing venation patterns are a useful clue for identifying bee families. In the forewing, the submarginal cells are the small wing chambers near the leading edge formed by veins. When three of these submarginal cells line up, they can create a curved, bow-like shape along the wing. This bow-like arrangement is a classic hallmark of sweat bees, the Halictidae. The veins and cell boundaries in Halictidae produce that distinctive curved trio, which helps distinguish them from other groups. Think about how the other options differ in wing venation: Sphecidae (thread-waisted wasps) have a different configuration of cells that doesn't form that bow shape. Ixodidae are ticks and lack wings entirely. Sphingidae are moths with wing patterns and venation not characterized by three submarginal cells forming a bow in the forewing. So the bow-like three submarginal cells point to Halictidae.

3. Which family is known for leaf-like expansions on the metatibiae?

A. Tingidae

B. Coreidae

C. Gerridae

D. Cimicidae

Leaf-like expansions on the hind legs are a hallmark of Coreidae, the leaf-footed bugs. In this family, the metatibiae often broaden into flattened, leaf-shaped lobes, which helps camouflage the insect among leaves and can aid in balance as it moves through vegetation. This distinctive leg modification distinguishes them from the other groups: Tingidae have lace-like, heavily sculptured wings; Gerridae are streamlined for skimming on water; Cimicidae are small, flattened, wingless bed bugs. So, the presence of leaf-like hind tibiae points to Coreidae.

4. Sphingidae larvae are commonly referred to as which of the following?

A. Hornworms

B. Sphinx moths

C. Hawk moths

D. Leafworms

Sphingidae larvae have a distinctive tail horn—a curved, horn-like projection on the last abdominal segment. That feature gives rise to the common name hornworms for many species, such as the tobacco hornworm and the tomato hornworm. The terms sphinx moths or hawk moths describe the adults in this family, not the larvae, while leafworms is a more general label for some caterpillars that feed on leaves and isn't specific to Sphingidae. So the best answer is hornworms.

5. Which wingspan is listed for Pyralidae?

A. Large (3-15 cm)

B. Small heads, hairy

C. Dark eyespots, hair like scales

D. 0.75-1.5 inch wingspan

Wingspan is the standard size descriptor for moths, and Pyralidae moths are typically small to medium in size. A wingspan of about three-quarters to one and a half inches (roughly 2 to 4 cm) fits that common range, so this option matches the usual measurement used for this family. The other choices either suggest a much larger wingspan or describe features such as head shape or color patterns, which aren't about size. Therefore, the listed wingspan for Pyralidae is 0.75–1.5 inches.

6. Which family is commonly known as Whites and sulfurs?

A. Pieridae

B. Papilionidae

C. Hesperiidae

D. Nymphalidae

Whites and sulfurs describe a group of butterflies that belong to a single family, Pieridae. This family is best known for its members with white or yellow wings, often with small black markings or simple patterns. The two common color-based groups—whites (predominantly white) and sulfurs (yellow or gold)—reflect the typical wing colors you'll see among many species in this family, such as the familiar Cabbage White. Understanding how this family differs from others helps as well: Papilionidae are the large, often tailed swallowtails; Hesperiidae are the stout-bodied skippers with hooked antennae and rapid flight; Nymphalidae are diverse brush-footed butterflies with reduced front legs. The Whites and sulfurs fit neatly into Pieridae because of their characteristic wing colors and patterns, and because many species in this family share similar life histories and host plants.

7. Which family is known as Whites and sulfurs and often has ultraviolet patterns for mating?

A. Papilionidae

B. Pieridae

C. Nymphalidae

D. Hesperiidae

The Whites and sulfurs are a group within the butterfly family Pieridae. This family is famous for wing colors that are white (whites) or yellow (sulfurs), with many species showing UV-reflective patterns on their wings. Those UV patterns aren't visible to us, but they are used in mating, helping males and females recognize each other and select mates under sunlight. The other families—such as swallowtails, brush-footed butterflies, and skippers—have different common names and typical color patterns, so they aren't described as Whites and sulfurs.

8. Where are Staphylinidae commonly found?

A. In water

B. In litter, under rocks, ant nests

C. In tree canopies

D. In deserts

Strove beetles (Staphylinidae) are mostly terrestrial and prefer moist, covered microhabitats where they can hide and hunt. The most reliable places to find them are leaf litter on the forest floor, under rocks or bark, and inside ant nests, where decaying matter and close-knit communities provide prey and shelter. This environment supports their predatory lifestyle and helps regulate moisture they need to stay active. While some species can be found in tree canopies or in aquatic settings, these are less typical for the group as a whole. Therefore, litter, under rocks, and within ant nests is where they are commonly encountered.

9. Which order has about 4000 described species?

A. Odonata

B. Orthoptera

C. Diptera

D. Lepidoptera

Comparing biodiversity across insect orders, Odonata stands out as having relatively fewer described species than many other large groups. This order, which includes dragonflies and damselflies, has an approximate total of a few thousand described species—around four thousand in many references. That smaller number contrasts with other orders: Diptera (flies) vastly exceeds that, Lepidoptera (butterflies and moths) also numbers in the hundreds of thousands, and Orthoptera (grasshoppers and crickets) is tens of thousands. The reason this order lands near the four-thousand mark is that, despite their widespread presence and ecological importance, their overall species richness is lower than these other major groups, while still highlighting distinctive traits like aquatic immature stages and predatory adults.

10. Which beetle family is commonly known as dung beetles?

A. Scarabaeidae

B. Passalidae

C. Buprestidae

D. Elateridae

Dung beetles are best associated with the group Scarabaeidae, a family that includes many beetles specialized for feeding on and utilizing animal dung. These beetles are famous for rolling and burying dung to provide food for their larvae, a behavior that defines many with the dung beetle lifestyle. Morphologically, scarabs often have stout bodies and antennae that end in a club of flat, leaflike segments (lamellate), a feature that helps distinguish them from other beetle families. The other families listed have different life histories: bess beetles (Passalidae) live in rotting wood; jewel beetles (Buprestidae) are typically metallic and wood-boring as larvae; and click beetles (Elateridae) are known for their ability to flip into the air with a clicking mechanism and have different body shapes. Because dung beetles are most commonly classified within Scarabaeidae, that is the best match.

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:

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