

Advanced Entomology Knowledge Assessment

Entomology · Answer Key · 22 Questions

1. Which insect order is characterized by hindwings that are significantly reduced and modified into halteres, used for balance during flight?

- A) Orthoptera
- B) Coleoptera
- C) Diptera**
- D) Hymenoptera

2. The process of ecdysis, or molting, in insects is primarily regulated by which class of hormones?

- A) Juvenile hormones
- B) Ecdysteroids**
- C) Neurotransmitters
- D) Pheromones

3. What is the primary function of the spiracles in insect respiratory systems?

- A) Gas exchange with the hemolymph
- B) Regulation of water loss
- C) Opening for atmospheric gas intake**
- D) Filtering particulate matter from the hemolymph

4. Which of the following insect mouthpart modifications is specifically adapted for lapping up liquids?

- A) Mandibles
- B) Maxillae
- C) Labium modified into a proboscis**
- D) Hypopharynx

5. In hemimetabolous insects, what is the term for the immature stage that resembles a smaller, wingless version of the adult?

- A) Larva
- B) Pupa
- C) Nymph**
- D) Ootheca

6. The study of insect behavior is known as:

- A) Insect pathology
- B) Insect physiology
- C) Insect taxonomy
- D) Etho-entomology**

7. Which of these insect orders is characterized by the presence of cerci, which are paired appendages at the posterior end of the abdomen, often used for sensory functions or defense?

- A) Lepidoptera
- B) Odonata
- C) Blattodea**
- D) Hymenoptera

8. The compound eye of an insect is composed of numerous individual visual units called:

- A) Ocelli
- B) Ommatidia**
- C) Rhabdomeres
- D) Photoreceptor cells

9. What is the primary chemical component of the insect exoskeleton, providing rigidity and protection?

- A) Cellulose
- B) Chitin**
- C) Keratin
- D) Collagen

10. Which insect order is known for its polymorphic societies, typically with queens, workers, and drones?

- A) Isoptera
- B) Hymenoptera**
- C) Coleoptera
- D) Diptera

11. The Malpighian tubules are the primary excretory organs in insects, analogous to the kidneys in vertebrates. They function by filtering waste products from the:

- A) Blood
- B) Hemolymph**
- C) Tracheal system
- D) Digestive tract

12. Which insect family is famously known for its bioluminescent properties, often referred to as 'fireflies' or 'lightning bugs'?

- A) Cicindelidae
- B) Lampyridae**
- C) Scarabaeidae
- D) Formicidae

13. The dorsal vessel in insects, which functions as a heart, pumps hemolymph:

- A) Away from the head
- B) Towards the head**
- C) Through the tracheal system
- D) To the digestive organs

14. What is the term for the specialized structures on the legs of some insects used for grasping prey?

- A) Tarsal claws
- B) Pulvilli
- C) Saltatorial adaptations
- D) Raptorial forelegs**

15. The process by which insects communicate using chemical signals is called:

- A) Auditory signaling
- B) Visual signaling
- C) Tactile signaling
- D) Pheromonal communication**

16. Which insect order contains species that undergo complete metamorphosis and have leathery forewings that protect membranous hindwings?

- A) Hemiptera
- B) Orthoptera
- C) Coleoptera**
- D) Lepidoptera

17. The study of insects in relation to disease transmission is termed:

- A) Arthropodology
- B) Acarology
- C) Medical entomology**
- D) Veterinary entomology

18. Which organ is responsible for producing digestive enzymes in insects?

- A) Proventriculus
- B) Midgut (mesenteron)**
- C) Hindgut (rectum)
- D) Crop

19. What is the primary purpose of stridulation in insects, such as crickets and grasshoppers?

- A) Thermoregulation
- B) Defense against predators
- C) Communication (e.g., mating calls)**
- D) Attracting prey

20. The order Thysanura (now often split into Archaeognatha and Zygentoma) is characterized by the absence of wings and the presence of three caudal appendages. What are these appendages commonly called?

- A) Antennae
- B) Mandibles
- C) Cerci and median filament**
- D) Tarsi

21. Which of the following is a characteristic feature of the insect subphylum Hexapoda?

- A) Two pairs of wings
- B) Six legs**
- C) A hard exoskeleton
- D) Compound eyes

22. What is the term for the posterior opening of the insect digestive tract?

- A) Proctodeum
- B) Mesenteron
- C) Stomodeum
- D) Anus**