***Animal Diversity, 8e* (Hickman)**

**Chapter 13 Arthropods**

1) The term "myriapod" includes

A) all arthropods, gastropods, and brachiopods.

B) just the millipedes and centipedes.

C) insects and their ancestors.

D) all arthropods except arachnids and crustaceans.

E) centipedes, millipedes, pauropods, and symphylans but not insects.

Answer: E

Section: 13.05

Topic: Subphylum Myriapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

4) Arthropods are successful because they have

A) a very efficient respiratory system.

B) highly developed sensory organs.

C) reduced competition through metamorphosis.

D) a protective exoskeleton that allows both protection and mobility.

E) All of the choices are correct.

Answer: E

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 1. Remember

Gradable: automatic

7) Trilobites exist today as

A) freshwater dwellers.

B) terrestrial crustaceans.

C) aquatic insects.

D) horseshoe crabs.

E) fossils only; they are all extinct.

Answer: E

Section: 13.03

Topic: Subphylum Trilobita

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

10) Horseshoe crabs

A) are, like their relatives the trilobites and eurypterids, now extinct.

B) are poisonous to humans.

C) live in freshwater habitats.

D) have a long, spine-like telson.

E) are adult forms of trilobites.

Answer: D

Section: 13.04

Topic: Subphylum Chelicerata

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

13) Spiders and insects have an excretory system composed of

A) permeable surface cuticle.

B) enclosed book lungs.

C) flame cells.

D) green glands.

E) malpighian tubules.

Answer: E

Section: 13.04

Topic: Subphylum Chelicerata

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

21) What carries Lyme disease?

A) *Dermacentor* sp

B) *Boophilus annulatus*

C) *Trombicula* sp

D) *Demodex* sp

E) *Ixodes* sp

Answer: E

Section: 13.04

Topic: Subphylum Chelicerata

Learning Objective: 13.04 Use examples to illustrate the importance of arthropods in causing human disease and as disease vectors.

Bloom's: 1. Remember

Gradable: automatic

22) Centipedes

A) are herbivorous.

B) have poison claws.

C) have five pairs of legs.

D) use gills for respiration.

E) are parthenogenetic and always oviparous.

Answer: B

Section: 13.05

Topic: Subphylum Myriapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

25) Groups of segments fused or combined into functional groups are called \_\_\_\_\_\_\_\_.

Answer: tagmata

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 1. Remember

Gradable: automatic

26) The tough, resistant, nitrogenous polysaccharide in the cuticle of arthropods is \_\_\_\_\_\_\_\_.

Answer: chitin

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 1. Remember

Gradable: automatic

41) Outline the apparent reasons why arthropods have achieved such incredible diversity and abundance.

Answer: Answers will vary.

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 5. Evaluate

Gradable: manual

48) Entomology is the study of

A) the growth and development of animals.

B) millipedes and centipedes.

C) insects.

D) all arthropods.

E) all invertebrates.

Answer: C

Section: 13.08

Topic: Phylogeny and Adaptive Diversification

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

51) Insects differ from other arthropods because insects

A) have paired, jointed legs.

B) have ectognathous mouthparts.

C) have a single pair of antennae.

D) have mandibles.

E) have tagmata or fused segments.

Answer: B

Section: 13.07

Topic: Subphylum Hexapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

60) Which is NOT a correct association of mouthparts and insect?

A) Sucking mouthparts—water scorpion

B) Sponging mouthparts—house fly

C) Biting mouthparts—grasshopper

D) Sponging mouthparts—butterfly

E) Sucking mouthparts—mosquito

Answer: D

Section: 13.07

Topic: Subphylum Hexapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 3. Apply

Gradable: automatic

63) How is an insect circulatory system best described?

A) The open system uses a dorsal aorta and accessory pulsatory organs to push hemolymph through the body cavities and wings, etc. but the hemolymph has little respiratory function.

B) The system is totally closed like ours with arteries and veins and the amebocytes aid in respiratory function.

C) The system is similar to ours with general closed sinuses but no distinct arteries and veins.

D) A circulatory system is totally absent and each body cell is on its own to gain food and get rid of wastes.

E) None of the choices are correct.

Answer: A

Section: 13.07

Topic: Subphylum Hexapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 2. Understand

Gradable: automatic

64) Insect tracheae are kept from collapsing by

A) having walls of thick chitin.

B) having spirals of cuticle called taenidia.

C) being filled with water all the way to the spiracle.

D) being inflated and under higher air pressure.

E) being wrapped in insect muscle.

Answer: B

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 1. Remember

Gradable: automatic

67) Which is an advantage(s) of a more complex form of metamorphosis where an adult is very different from the larvae?

A) This would allow an insect species to exploit two different food sources.

B) An insect could evade a predator specialized for one stage.

C) It allows an insect to overwinter in resistant stage.

D) All of the choices are advantages.

E) None of the choices are correct.

Answer: D

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 2. Understand

Gradable: automatic

70) Insects undergo a period of dormancy in winter or summer called

A) ecdysis.

B) trophallaxis.

C) metamorphosis.

D) diapause.

E) the pupal stage.

Answer: D

Section: 13.07

Topic: Subphylum Hexapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

74) The study of insects is known as \_\_\_\_\_\_\_\_.

Answer: entomology

Section: 13.08

Topic: Phylogeny and Adaptive Diversification

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

79) The respiratory system in insects consists of specialized air tubes called the \_\_\_\_\_\_\_\_.

Answer: tracheae

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 1. Remember

Gradable: automatic

83) Each stage of an insect between molts is called a(n) \_\_\_\_\_\_\_\_.

Answer: instar

Section: 13.07

Topic: Subphylum Hexapoda

Learning Objective: 13.03 Explain how molting and ecdysis occur and why these processes are required.

Bloom's: 1. Remember

Gradable: automatic

85) Substances secreted by one individual that affect the behavior or physiology of another individual are called \_\_\_\_\_\_\_\_.

Answer: pheromone

Section: 13.07

Topic: Subphylum Hexapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

91) Discuss hypotheses for the evolution of insect wings.

Answer: Answers will vary.

Section: 13.07

Topic: Subphylum Hexapoda

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 5. Evaluate

Gradable: manual

92) How do crustacea differ from other arthropod groups?

A) They possess a telson tail.

B) Only crustaceans have two pairs of antennae.

C) Only crustaceans have chitinous exoskeletons.

D) Only Crustacea possess a two-part body plan of cephalothorax and abdomen.

E) A hemocoel is only found in Crustacea.

Answer: B

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

93) Crustacea are ***biramous***, meaning they possess

A) a telson tail.

B) two large pincers.

C) two pair of antennae.

D) jointed appendages having two branches.

E) a body divided into two regions, the cephalothorax and abdomen.

Answer: D

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

100) Since the hemolymph of crustaceans leaves the heart by arteries, why is it considered an open rather than a closed system?

A) The hemolymph lacks any respiratory pigments.

B) The hemolymph flows through the hemocoel and returns via venous sinuses rather than enclosed veins.

C) The heart does not pump hemolymph but it moves by ciliary action instead.

D) The hemolymph lacks any respiratory function.

Answer: B

Section: 13.02

Topic: Why are Arthropods So Diverse and Abundant?

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 3. Apply

Gradable: automatic

101) The respiratory apparatus of a crayfish is

A) a set of gills under the carapace.

B) book lungs inside the carapace.

C) a set of gills along the underside of the tail.

D) tracheal tubes throughout the body.

E) a cluster of alveoli under the tail.

Answer: A

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

103) What is the function of the green glands in the crayfish?

A) Secrete fluids to aid digestion

B) Increase oxygen absorption for respiration

C) Sensing vibrations in water

D) Reproduction

E) Excretion

Answer: E

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

106) The oldest ancestral and most widely occurring larva in the Crustacea is

A) a juvenile resembling the adult.

B) the trochophore.

C) the veliger.

D) the nauplius.

E) a planula.

Answer: D

Section: 13.08

Topic: Phylogeny and Adaptive Diversification

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

109) Marine crustaceans that are sessile, secrete calcareous plates, and filter-feed are

A) ostracods.

B) barnacles.

C) copepods.

D) decapods.

E) isopods.

Answer: B

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

112) The dorsal cuticle of the head of many crustaceans extends posteriorly to form a covering called the \_\_\_\_\_\_\_\_.

Answer: carapace

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

117) The process which culminates with arthropods regularly shedding their exoskeleton because it has become too small for the growing body is called \_\_\_\_\_\_\_\_.

Answer: molting

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.03 Explain how molting and ecdysis occur and why these processes are required.

Bloom's: 1. Remember

Gradable: automatic

118) Most appendages of crustaceans are two-branched, or \_\_\_\_\_\_\_\_.

Answer: biramous

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

122) A group of crustaceans that are of extreme ecological importance, often dominating the primary consumer level in aquatic communities, is the \_\_\_\_\_\_\_\_.

Answer: Copepoda

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.02 Characterize the four extant subphyla in terms of tagmata, appendages, and habitats occupied.

Bloom's: 1. Remember

Gradable: automatic

129) Crustaceans are often referred to as the "insects of the sea." This is partially because crustaceans are so abundant in the sea, as insects are on land, and because insects never successfully invaded the marine environment. Discuss why crustaceans 1) are so abundant in the ocean, and 2) why they did not radiate extensively into terrestrial environments.

Answer: Answers will vary.

Section: 13.06

Topic: Subphylum Crustacea

Learning Objective: 13.01 Describe the features key to arthropod success.

Bloom's: 4. Analyze