

CHAPTER

30

DIRECTED READING

Mollusks and Annelids

► Section 30-1: Mollusks

Mollusks Have a True Coelom

Complete each statement by writing the correct term or phrase in the space provided.

1. Mollusks and annelids were the first organisms to develop a(n) _____.
2. Mollusks and annelids have a larval stage called a(n) _____.

Read each question, and write your answer in the space provided.

3. What is one of the evolutionary advantages of having a true coelom?

4. What are the characteristics of a trochophore?

Mollusks Share Several Key Characteristics

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|------------------------|---|
| _____ 5. visceral mass | a. rasping tonguelike organ located in the mouth |
| _____ 6. mantle | b. muscular region used primarily for locomotion |
| _____ 7. foot | c. tubular structures used to recover useful materials from coelomic fluid before fluid waste is discharged |
| _____ 8. radula | d. central section containing organs |
| _____ 9. nephridia | e. heavy fold of tissue that forms the outer layer of the body |

Mark each statement below T if it is true or F if it is false.

- _____ 10. Mollusks exhibit radial symmetry.
- _____ 11. The digestive tract of mollusks is surrounded by mesoderm, which acts as a barrier to the diffusion of nutrients into the cells of the body.
- _____ 12. Most mollusks have a four-chambered heart and a closed circulatory system.
- _____ 13. The gills of a mollusk are located in the mantle cavity.
- _____ 14. All mollusks are hermaphrodites.

Mollusks Show Many Variations on a Body Plan

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|----------------------------|---|
| _____ 15. gastropods | a. two thick muscles that connect the valves (shells) of bivalves |
| _____ 16. nudibranchs | b. class of mollusks that includes oysters, clams, and scallops |
| _____ 17. bivalves | c. class of mollusks that includes snails and slugs |
| _____ 18. adductor muscles | d. hollow tubes used to carry water to and from gills |
| _____ 19. siphons | e. class of mollusks that includes squids and octopuses |
| _____ 20. cephalopods | f. a type of gastropod |

Mark each statement below T if it is true or F if it is false.

- _____ 21. Terrestrial species of gastropods secrete a mucus onto the ground to form a slimy path that they can glide along.
- _____ 22. Gastropods are not edible.
- _____ 23. The valves, or shells, of a bivalve are secreted by the mantle.
- _____ 24. The gills of clams are covered with mucus that traps food particles.
- _____ 25. The foot of an octopus is divided into eight tentacles.
- _____ 26. All cephalopods lack an external shell.
- _____ 27. Cephalopods are the most intelligent invertebrates.
- _____ 28. Cephalopods feed by filtering organisms from the water.

► Section 30-2: Annelids

Annelids Were the First Segmented Animals

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|----------------------------|--|
| _____ 1. segments | a. primitive brain |
| _____ 2. cerebral ganglion | b. fleshy appendages |
| _____ 3. septa | c. body cavity |
| _____ 4. coelom | d. external bristles |
| _____ 5. setae | e. series of repeated structures along the length of the body |
| _____ 6. parapodia | f. internal body walls that separate the segments of most annelids |

Read each question, and write your answer in the space provided.

7. How do nutrients and other materials pass between the segments of an annelid?

8. What functions do the segments perform and how do they differ?

9. What is the primary evolutionary difference between mollusks and annelids?

Annelids Are Grouped According to Their External Features

Complete each statement by writing the correct term or phrase in the space provided.

10. Marine segmented worms are members of the class _____.
11. A distinctive characteristic of polychaetes is a pair of fleshy, paddlelike _____ that occur on most of their segments, and are used to swim, burrow, or crawl.
12. Tubeworms live with their heads stuck out of a(n) _____ formed by the hardened secretions of glands located on their segments.
13. *Nereis* are _____ that use strong jaws to feed on small animals.
14. Earthworms are members of the class _____.
15. Oligochaetes have no _____ and only a few _____ on each segment.
16. Earthworms have neither a distinctive _____ region nor _____. However, they do have light-sensitive and touch-sensitive organs located at each end of their body.
17. The grinding action of the _____ inside the digestive system of the earthworm crushes the soil particles together.
18. The tunneling activity of earthworms allows _____ to penetrate the soil, and the _____ of earthworms fertilize the soil.
19. The fluid within the coelom of each body segment creates a(n) _____ skeleton that supports the segment.
20. When the _____ muscles of an earthworm contract, the segment elongates, and when the _____ muscles contract the segment bunches up, increasing in diameter.
21. Leeches are the only members of the class _____.
22. Leeches lack both _____ and _____.
23. The body of a leech is flattened and its _____ are not separated internally.