

## Chapter 31

1. Animals are multicellular \_\_\_\_\_ without cell walls.
2. Eumetazoa can be subdivided into two principal branches based on \_\_\_\_\_.
3. The animal group, Radiata, are \_\_\_\_\_, having two embryonic layers.
4. The \_\_\_\_\_ of deuterostomes develop quite differently than those of protostomes.
5. In the animal subkingdom, \_\_\_\_\_, the animals lack symmetry and possess neither tissues nor organs.
6. \_\_\_\_\_ is a process in which a definite head and brain evolves.
7. \_\_\_\_\_ is the embryonic layer found only in bilaterally symmetrical eumetazoans.
8. \_\_\_\_\_ have a body cavity located between the mesoderm and endoderm.
9. In a \_\_\_\_\_ circulatory system, circulation of blood is more controlled—the blood is moved faster and more efficiently than in other types of circulatory systems.
10. Myzostomids have been found to be associated with \_\_\_\_\_ since the Ordovician.
11. Current molecular analysis shows that protostomes should be grouped into \_\_\_\_\_ clades.
12. Nearly all major animal body plans can be seen in \_\_\_\_\_ aged rocks.
13. “Evo-Devo” is a synthesis of evolutionary and developmental biology, studying the expression of \_\_\_\_\_ genes in developing animal embryos.
14. The evolution of a coelom allows for
  - A. bilateral symmetry to develop
  - B. cephalization to occur
  - C. the development of a larger and longer digestive tract
  - D. the expansion of gonads
  - E. c and d
15. Which of the following features in embryonic development of deuterostomes does not represent a revolutionary difference from protostomes?
  - A. pattern of blastopore formation
  - B. radial cleavage pattern for cell division
  - C. spiral cleavage pattern for cell division
  - D. the first cleavage divisions of the fertilized embryo produce identical daughter cells, and any single cell, if separated can develop into a complete organism
  - E. the coelom is normally produced by an invagination of the archenteron
16. Of the following combination of statements about protostomes and deuterostomes, which choice is correct?
  - A. Protostomes are animals in which the mouth develops from the blastopore. The anus or anal pore of protostomes develops from the second opening. Deuterostomes are animals in which the anus develops from the blastopore and the mouth develops secondarily later in their development.
  - B. Protostomes are animals in which the anus develops from the blastopore. The mouth of protostomes develops from the second opening. Deuterostomes are animals in which the anus develops from the blastopore and the mouth develops secondarily later in their development.
  - C. Protostomes are animals in which the mouth develops from the blastopore. The anus or anal pore of protostomes develops from the second opening. Deuterostomes are animals in which the mouth develops from the blastopore and the anus develops secondarily later in their development.
  - D. Protostomes are animals in which the mouth or anus develops from the blastopore, depending on the species. Deuterostomes are animals in which the mouth and anus develops from the blastopore, depending on the species.