

Comparative Study of Animal Phyla and Body Plans

Biology · Answer Key · 21 Questions

1. Which phylum is characterized by sessile and free-living modes of life, radial symmetry, and lacks cephalization and a blood system?

- A) Porifera
- B) Cnidaria**
- C) Platyhelminthes
- D) Annelida

2. Animals with bilateral symmetry can be cut into two mirror images by how many vertical planes through their center?

- A) More than one
- B) Exactly one**
- C) No vertical planes
- D) Any plane

3. What is the term for the concentration of nerve cells at the anterior end of a bilaterally symmetrical animal's body?

- A) Nerve net
- B) Central nervous system
- C) Cephalization**
- D) Ganglion

4. Which phylum has a triploblastic body, a closed blood system, and is coelomate with two openings in the digestive tract?

- A) Arthropoda
- B) Annelida
- C) Chordata**
- D) Platyhelminthes

5. Animals that have an ectoderm and an endoderm, separated by a non-cellular mesoglea, are classified as:

- A) Triploblastic
- B) Diploblastic**
- C) Acoelomate
- D) Coelomate

6. Which phylum includes free-living and parasitic forms, is bilaterally symmetrical, triploblastic, and acoelomate?

- A) Cnidaria
- B) Annelida
- C) Platyhelminthes**
- D) Arthropoda

7. What type of symmetry is characterized by having a definitive oral and aboral side, but no left or right side?

- A) Bilateral symmetry
- B) Asymmetrical
- C) Radial symmetry**
- D) Spherical symmetry

8. The phylum Porifera consists of animals that are:

- A) Diploblastic and radially symmetrical
- B) Triploblastic and bilaterally symmetrical
- C) Cellular level of organization and asymmetrical**
- D) Organ level of organization and radially symmetrical

9. Which of the following is a characteristic of Arthropoda?

- A) Closed blood system
- B) Coelenteron
- C) Open blood system (haemocoel)**
- D) Spongocoel

10. Animals that are triploblastic have how many germ layers in their developing embryo?

- A) One
- B) Two
- C) Three**
- D) Four

11. Which phylum is described as aquatic (fresh and sea water), terrestrial, and underground, with cephalization and an open blood system?

- A) Annelida
- B) Chordata
- C) Arthropoda**
- D) Platyhelminthes

12. The term 'sessile' means an animal is:

- A) Able to move quickly
- B) Sedentary and attached to a substrate**
- C) Free-floating in water
- D) Burrowing underground

13. Which phylum possesses a coelom, is triploblastic, and has a closed blood system?

- A) Cnidaria
- B) Porifera
- C) Platyhelminthes
- D) Annelida**

14. What is the primary disadvantage of radial symmetry mentioned in the text?

- A) Slow and inefficient locomotion**
- B) Lack of a digestive tract
- C) Absence of cephalization
- D) Limited environmental adaptation

15. All bilaterally symmetrical animals are:

- A) Diploblastic and do not develop organs
- B) Triploblastic with three germ layers**
- C) Radially symmetrical
- D) Acoelomate

16. The body cavity in Arthropoda is often referred to as a:

- A) Coelom
- B) Spongocoel
- C) Coelenteron
- D) Haemocoel**

17. Which phylum is characterized by having only one opening for both ingestion and egestion?

- A) Chordata
- B) Annelida
- C) Platyhelminthes**
- D) Arthropoda

18. Animals that show radial symmetry have an extended:

- A) Central nervous system
- B) Specialized head
- C) Nerve net**
- D) Complex organ systems

19. Which of these phyla are described as occurring everywhere, including terrestrial and aquatic environments?

- A) Cnidaria and Porifera
- B) Platyhelminthes and Cnidaria
- C) Annelida and Arthropoda**
- D) Porifera and Platyhelminthes

20. The ectoderm is the:

- A) Inner germ layer
- B) Middle germ layer
- C) Outer germ layer**
- D) Non-cellular jelly layer

21. Which phylum has a 'spongocoel' and is aquatic (sea water)?

- A) Cnidaria
- B) Porifera**
- C) Platyhelminthes
- D) Annelida