

1. The most important structural difference distinguishing prokaryotes from eukaryotes is the \_\_\_\_\_.

- A. nuclear membrane
- B. chloroplasts
- C. mitochondria
- D. cell membrane

2. Prokaryotes \_\_\_\_\_.

- A. may contain chloroplasts
- B. may contain mitochondria
- C. may contain enzymes found in chloroplasts
- D. are larger than eukaryotes

3. Which statement about prokaryotes is untrue?

- A. Prokaryotes can reproduce using meiosis.
- B. Prokaryotes contain plasmids.
- C. Prokaryotes have only one chromosome.
- D. Prokaryotes can reproduce with binary fission.

4. Which statement about bacteria is untrue?

- A. Gram-positive bacteria are found in the respiratory tract, gram-negative bacteria in the colon.
- B. The colon is colonized by bacteria; the urine is not.

C. Both bacteria and archaeobacteria cause diseases.

D. Cyanobacteria are photosynthetic.

5. Archaeobacteria \_\_\_\_\_.

- A. have a tougher cell membrane than bacteria
- B. have no cell wall
- C. rarely cause diseases
- D. are almost all anerobic
- E. all of the above

6. Which statement about cyanobacteria is untrue?

- A. Cyanobacteria perform photosynthesis.
- B. Cyanobacteria live near hot water vents at the bottom of the ocean.
- C. Cyanobacteria live symbiotically with fungi as lichens on rocks and trees.
- D. Cyanobacteria are prokaryotes.

7. Which statement is untrue?

- A. Chemoautotrophs make their own food without sunlight.
- B. Archaeobacteria are chemoautotrophs that live in nearly boiling water.
- C. Chemoheterotrophs get their energy by eating other things.
- D. Chemoautotrophs make their food by snagging molecules of oxygen from the air.

8. Which statement about energy production is untrue?

- A. Thylakoids use chlorophyll to capture sunlight.
- B. The Calvin cycle takes place inside thylakoids.
- C. The Krebs cycle uses glucose made in the Calvin cycle to make ATP and NADH.
- D. Oxidative phosphorylation uses NADH to make ATP.

9. Pick the correct statement about cellular metabolism.

- A. Eukaryotes are able to make the high energy molecules ATP and NADPH, but prokaryotes make only ATP.
- B. Photosynthesis takes in oxygen, light, and glucose to make ATP.
- C. Mitochondria contain their own DNA separate from the cell's DNA.
- D. Chloroplasts are believed to have evolved from mitochondria.

10. The plant-like protists include:

- A. euglenia, downy mildew, diatoms, and algae.
- B. euglenia, amoeba, diatoms, and algae.
- C. euglenia, slime molds, diatoms, and algae.
- D. euglenia, dinoflagellates, diatoms, and algae.

11. Kelp \_\_\_\_\_.

- A. is a form of algae
- B. is a form of plant
- C. is multicellular
- D. consumes protists for part of its nutrition

12. Which statement about the fungi-like protists is untrue?

- A. Fungi-like protists include slime molds and downy mildew.
- B. Fungi-like protists damaged the Irish potato crop in the 1840's.
- C. Fungi-like protists do not move about.
- D. Fungi-like protists periodically cause red tides.

13. All animals \_\_\_\_\_.

- A. are photoheterotrophs
- B. have flexible cell membranes
- C. store glucose as starch
- D. reproduce by alternating between haploid and diploid stages

14. Which statement about animals is untrue?

- A. Porifera (sponges) have only one germ cell layer.
- B. Porifera have a symmetrical body structure.
- C. Cnidaria includes jellyfish, corals, and hydras.
- D. Cnidaria have two germ cell layers.

15. The nine animal phyla are listed below on the left in order of increasing complexity:

- A. porifera
- B. cnidaria
- C. platyhelminths
- D. nematodes
- E. annelids
- F. molluscs
- G. arthropods
- H. echinoderms
- I. chordates.

Identify the correct phylum for each of these animals:

octopus	<u>        F        </u>
roundworms	<u>        D        </u>
flatworms	<u>        C        </u>
centipedes	<u>        G        </u>
sea urchins	<u>        H        </u>
stingrays	<u>        I        </u>
leeches	<u>        E        </u>
sea anemones	<u>        B        </u>
sponges	<u>        A        </u>

16. Which statement about Platyhelminthes (flatworms) is untrue?

- A. Platyhelminths have three cell layers.
- B. Platyhelminths have a digestive tract with only one opening.
- C. Platyhelminths include the roundworms.
- D. Tapeworms do not have a digestive sac.

17. Similarities between nematodes and annelids include all of the following, except:

- A. Both nematodes and annelids have a fluid filled sac in their mesoderm.
- B. Both nematodes and annelids have the blood vessels right up against the wall of the intestinal tract.
- C. Both nematodes and annelids have a mouth, pharynx, gizzard, and anus.
- D. Both nematodes and annelids are segmented.

18. Which statement is true?

- A. Protostomes include nematodes, annelids, molluscs, arthropods, and echinoderms.
- B. In deuterostomes, the mouth develops before the anus during embryologic development.
- C. Echinoderms are more closely related to chordates than to arthropods.
- D. Octopuses are molluscs.

19. Starfish, sea urchins, and sea cucumbers \_\_\_\_\_.

- A. are chordates
- B. are echinoderms
- C. share a known common ancestor with chordates
- D. periodically molt

20. Echinoderms and chordates are thought to have evolved from a common ancestor because \_\_\_\_\_.

- A. they are both protostomes
- B. they are both deuterostomes
- C. both share the same mitochondrial DNA
- D. they both manifest a cartilaginous notochord during embryologic development

21. The presence of a notochord permits an animal to be labeled a chordate. The notochord \_\_\_\_\_.

- A. must be cartilaginous
- B. must extend beyond the anus
- C. must connect to pharyngeal slits at some stage of development
- D. can be present in the embryo but not the adult stage

22. Which statement about fungi is untrue?

- A. Fungi do not engage in photosynthesis.
- B. Fungi can digest food taken into their cells.
- C. Fungi have chitin in their cell walls.
- D. Fungi contain mitochondria.

23. In grouping animals, which statement is untrue?

- A. If you can identify the common ancestor and all the species descended from that common ancestor, then all the species and their common ancestor, together, is called polyphyletic group.
- B. If you think species are related but you cannot identify their common ancestor, the species are polyphyletic.
- C. If you identify the common ancestor, but not all of the species that descended from that common ancestor, the identified species and the common ancestor are paraphyletic.
- D. If you can identify the common ancestor and all the species descended from that common ancestor, then all the species and their common ancestor, together, is called monophyletic group.