

Test – Lesson 17 – Prokaryotes, Protists, Animals, and Fungi – Answer Key Page 1

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.**

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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.

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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

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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.