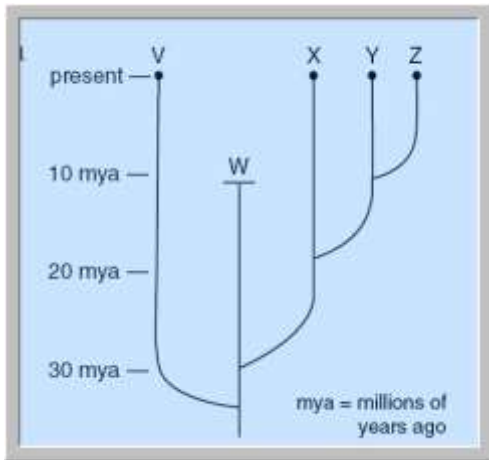


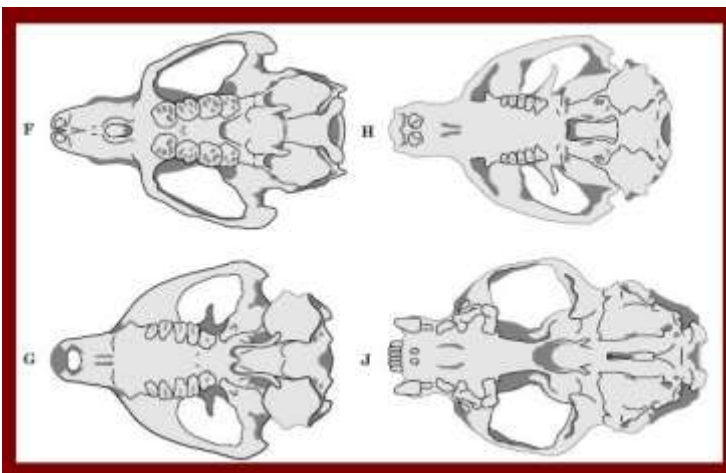
Quiz 16: Classification (25 points)



1. Which statement is best supported by the phylogenetic tree shown?
- Species W is still developing from a prior species.
 - Species W first came into existence 10 million years ago.
 - Species V is still alive today and is the oldest species.
 - Species X, Y, and Z became extinct 20 million years ago.

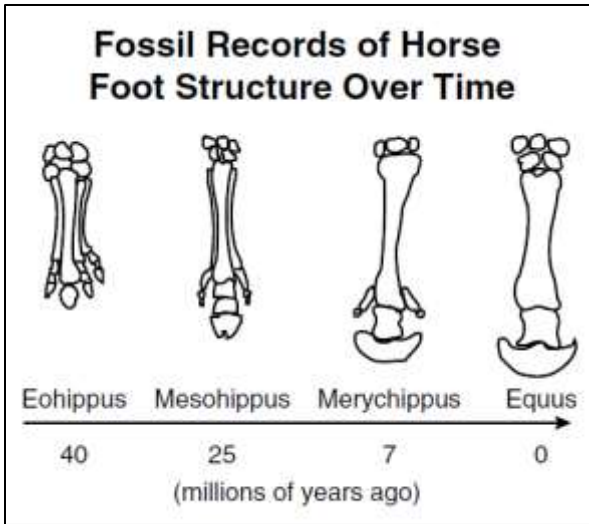
	Fish	Bird	Turtle	Frog	Dog
Number of atria	1	2	2	2	2
Number of ventricles	1	2	2	1	2
Separation of ventricles	—	Total	Partial	—	Total

2. Which type of animal is most closely related to a mammal, based on heart structure?
- Bird
 - Fish
 - Frog
 - Turtle



3. The skulls below belong to different animals. Which skull belongs to the animal that is probably unrelated to the other three?
- F
 - G
 - H
 - J

4. *Escherichia coli* is the scientific name of a bacterium. What category of classification is *Escherichia*?
- Order
 - Genus
 - Phylum
 - Species

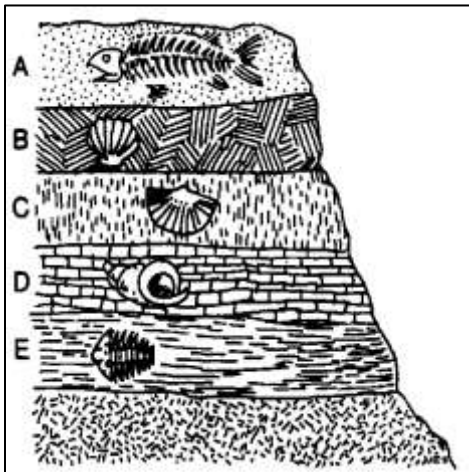


5. According to the diagram, during the last 40 million years, the structure of the horse's foot has _____.
- lost its toes
 - become smaller
 - grown toes
 - remained the same size

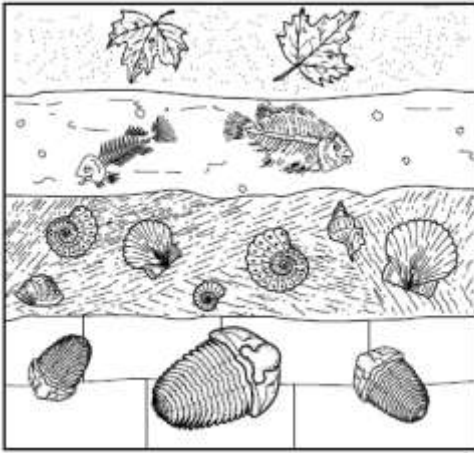
6. According to the biological definition of a species, which organisms listed below would belong to the same species?
- Animals that can breed and produce fertile offspring
 - Protists that are the same shape and have the same structures for movement
 - Plants that have flowers with the same structures that attract the same pollinators
 - Mushrooms that are the same color and can grow on trees

Unknown animal: Met-Gly-Ser-Tyr-Tyr-Arg-His-His-Glu-Lys-Asp

7. One method of determining the classification of an animal is by comparing the amino acid sequence. Which of these animals most closely resembles the unknown animal?
- Mouse: Met-Gly-Ser-Tyr-Tyr-Arg-His- Glu-Val-Val-Leu
 - Dog: Met-Gly-Ser-Tyr-Tyr-Arg-His-Asp- Glu-Lys-Asp
 - Horse: Met-Gly-Ser-Ser-Tyr-Arg-Arg- Asp-His-Glu-Lys-Asp
 - Cat: Met-Gly-Ser-Tyr-Tyr-Arg-His-His- Arg-Cys-Thre-Asp

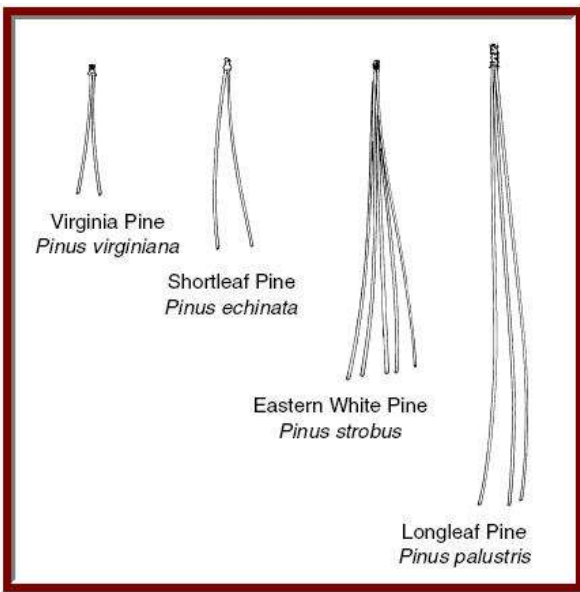


8. In the diagram at left, which strata (layer) would be expected to contain the most radioactivity?
- A
 - B
 - D
 - E



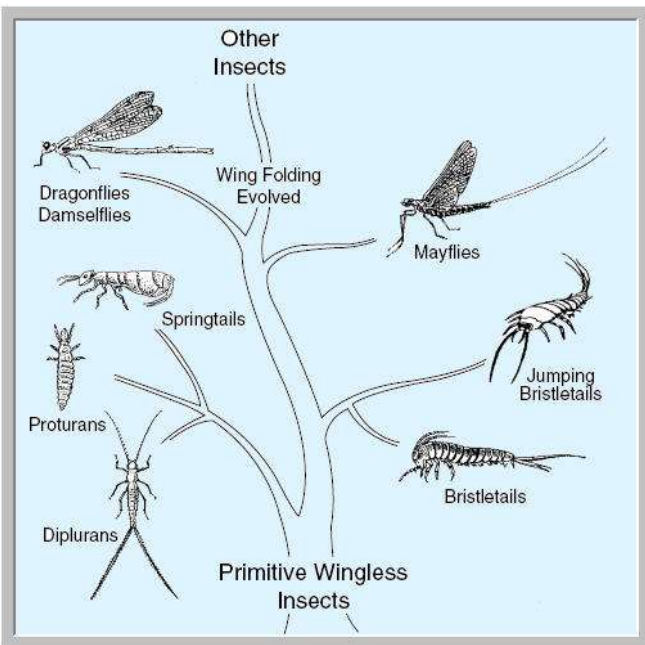
9. The diagram shows undisturbed sedimentary rock strata containing fossils. Which statement best summarizes the history of this area?

- The area was once a forest and was replaced by a freshwater lake.
- The area was once a freshwater lake and was replaced by a saltwater sea.
- The area was once a saltwater sea and later was replaced by a coniferous forest.
- The area was once a saltwater sea and later was replaced by a forest.



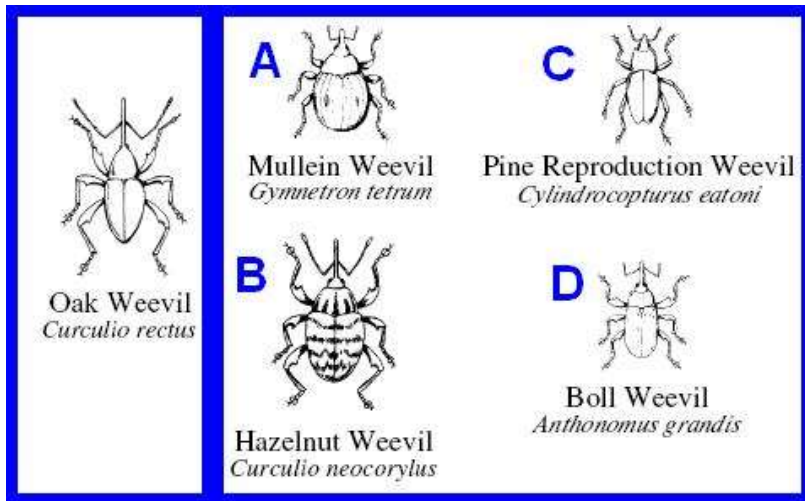
10. A biology student collected pine needles from four different species of trees. She then made diagrams showing the number and actual length of needles in a bundle and the common and scientific name of each species. Use her diagram above to help you answer the following question. These four different pine trees are not classified in the same —

- phylum
- species
- order
- genus



11. According to this chart, the insects that are most closely related are the —

- springtails and bristletails
- springtails and proturans
- bristletails and mayflies
- dragonflies and proturans



12. Which of these is most closely related to the oak weevil?

- a. A
- b. B
- c. C
- d. D

13. Ascidians are sac-like marine organisms. Their larvae have well-developed brains and dorsal nerve cords. This suggests that ascidians should be classified with the —

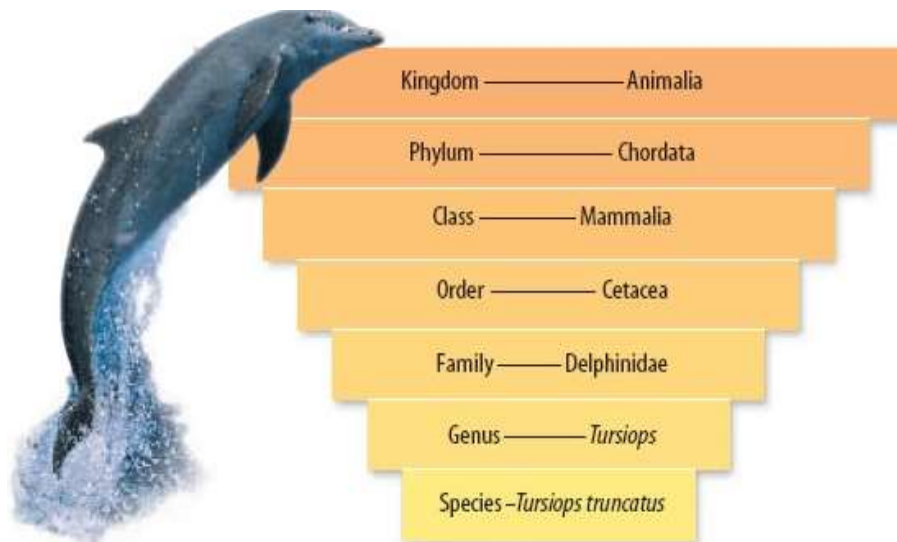
- a. cnidarians
- b. chordates
- c. annelids
- d. sponges

14. A biologist has just discovered a new life form. The newly described organism is multicellular, does not carry on photosynthesis, and absorbs nutrients from the environment. It is composed of eukaryotic cells with cell walls. In which kingdom would the organism be classified?

- a. Plant
- b. Animal
- c. Bacteria
- d. Fungi

15. During a trip to a rain forest, a scientist discovered a new organism living near some rotting logs. The scientist observed that the organism had moist skin, no hair, and an internal skeleton and that it laid its eggs in water. This organism was probably a new species of —

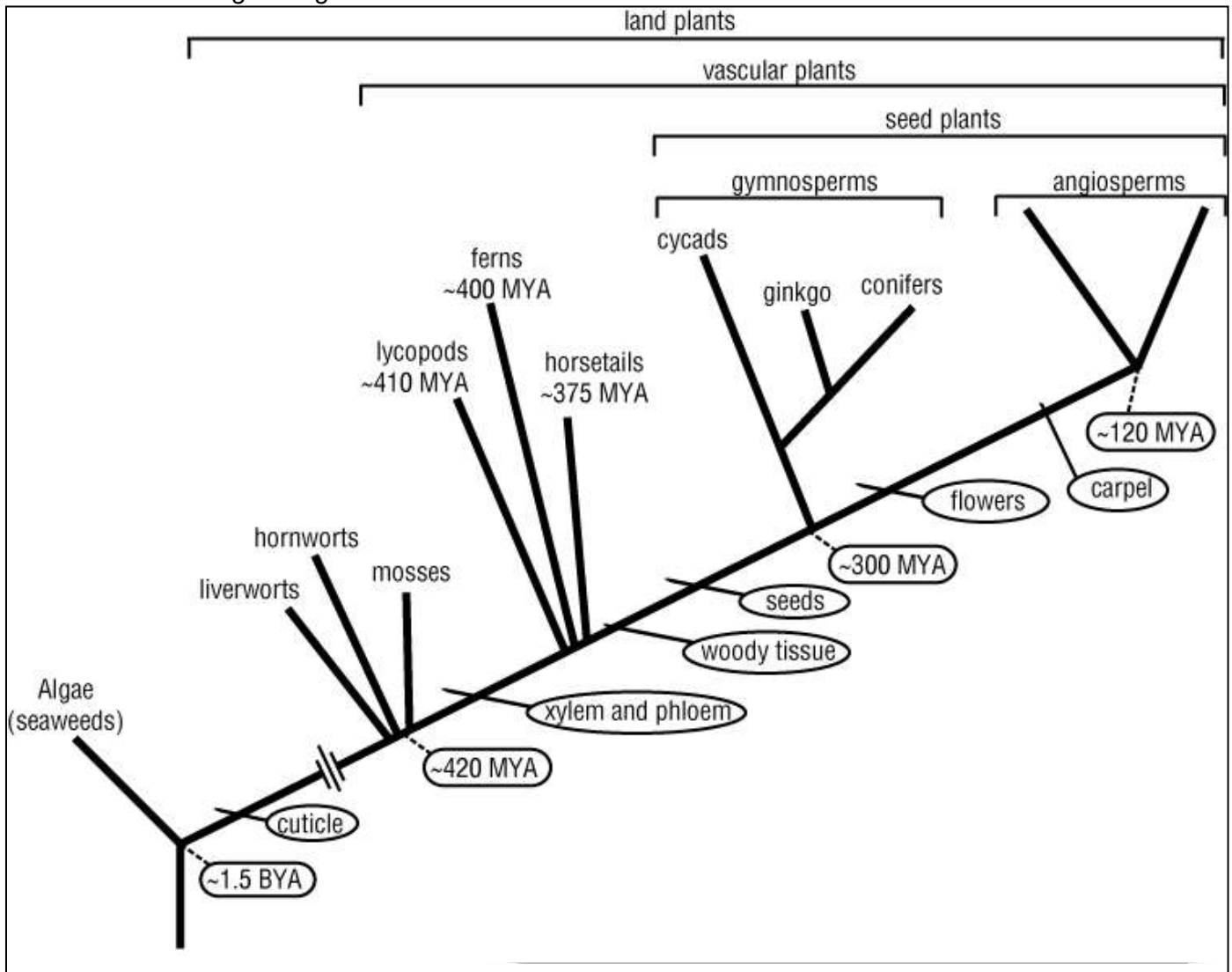
- a. reptile
- b. amphibian
- c. invertebrate
- d. mammal



16. Based on the taxonomy of the bottlenose dolphin shown at left, which of the following statements is not true.

- a. The scientific names of some other closely related dolphin species also begin with "Tursiops."
- b. The dolphin is in a different phylum from invertebrates.
- c. The dolphin is a member of the eukarya domain.
- d. The dolphin is a member of the same class as sharks.

For questions 17-18, multiple answers are correct. Please indicate ALL correct answers on your zipgrade. Refer to the following cladogram:



17. According to the cladogram, which of the following derived traits are not present in ferns? Choose 2.

- a. cuticle
- b. flowers
- c. seeds
- d. xylem
- e. wood

18. On a walk through the woods, you find a plant that has seeds and vascular tissue (xylem and phloem), but it does not have flowers. Which of the following plants could it be? Choose 2.

- a. Angiosperm
- b. Conifer
- c. Fern
- d. Ginkgo
- e. Moss

For questions 19 -20, multiple answers are correct. Please indicate ALL correct answers on your zipgrade. Refer to the following dichotomous key

1a. Organisms lacking cell nuclei	5
1b. Organisms with cell nuclei	2
2a. Unicellular or tissue-level organisms	Protista
2b. Complex, multicellular organisms	3
3a. Organisms autotrophic.	Plantae
3b. Organisms heterotrophic.	4
4a. Organisms absorb food	Fungi
4b. Organisms ingest food	Animalia
5a. Organisms only live in extreme environments. . . .	Archaeobacteria
5b. Organisms do not live in extreme environments. . .	Eubacteria

19. What kinds of organisms might be included under the description in 1a (Organisms lacking cell nuclei)? Choose 2.

- a. Archea
- b. Bacteria
- c. Eukaryotes
- d. Prokaryotes
- e. Protists

20. Similarities between animals and fungi include which of the following. Choose 3.

- a. Absorption of food
- b. Have cell nuclei
- c. Heterotrophic
- d. Ingestion of food
- e. Multicellular

Name			
Date		Period	

	A	B	C	D	E		A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	11	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	12	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	13	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	14	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	15	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	17	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	19	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>