

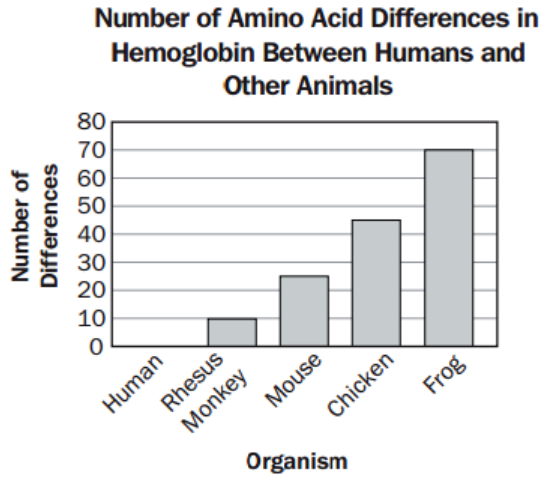
Biology Milestone: Unit 1 Topics (Organization)

Multiple Choice

Identify the choice that best completes the statement or answers the question.

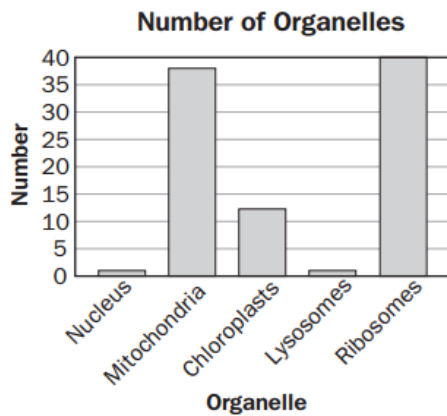
- _____ 1. Does the presence of DNA help scientists classify disease-causing agents as bacteria or viruses?
- a. Yes, viruses contain DNA but bacteria do not. c. No, neither bacteria nor viruses contain DNA.
b. Yes, bacteria contain DNA but viruses do not. d. No, both bacteria and some viruses contain DNA.
- _____ 2. What is the role of mitochondria in eukaryotic plant cells?
- a. to transport materials c. to produce chemical energy
b. to provide a storage area d. to control chemical reactions
- _____ 3. Which characteristic does a virus have in common with a eukaryotic cell?
- a. a cell wall c. a nucleic acid
b. a mitochondrion d. a ribosome
- _____ 4. In prairies around the world, grass species provide food for many different prairie animals. Based on the titles, in which book would a student find the MOST information about relationships between specific plants and animals of the prairie?
- a. *The Prairie Community* c. *The Ecosystems of the Prairie*
b. *The Biomes of the Prairie* d. *The Abiotic Factors of a Prairie*
- _____ 5. Which of the following supported the change in the classification system from five kingdoms to six kingdoms?
- a. parasites on deep sea fish c. molecular differences among bacteria
b. new viral diseases in people d. new insect species in tropical rain forests
- _____ 6. A student soaked 50 lima bean seeds and 50 green bean seeds in water for 24 hours. Then she planted the seeds in soil at a depth of two centimeters, using the same amount of water, light, and heat for each kind of seed. She measured every three days to determine which type of seed grew the fastest. The paragraph describes
- a. an observation c. an experiment
b. a hypothesis d. a conclusion
- _____ 7. About one in one million people are born with dyskeratosis congenita. This disease affects many areas of the body. It causes fingernails and toenails to grow abnormally and discoloration of the skin. Dyskeratosis congenita is caused by a mutation in a gene responsible for the production of ribosomes; therefore, ribosome functioning is impaired.
- Which cell process would be most directly affected by this disease?
- a. the production of energy c. the removal of substances
b. the production of proteins d. the breakdown of chemicals

8. The graph shows the number of differences in the amino acids of a particular hemoglobin polypeptide in different organisms. What inference can be made from the data in the graph?



- a. Rhesus monkeys and mice do not share a common ancestor.
 b. Hemoglobin is more important to frogs than to other organisms.
 c. Humans and rhesus monkeys are more similar than chickens and frogs.
 d. Amino acids are the building blocks of hemoglobin in all organisms except humans.

9. An organism is multicellular and can be seen without a microscope. The bar graph shows the numbers of some of the organelles in one of the cells from the organism. From which kingdom is this organism?



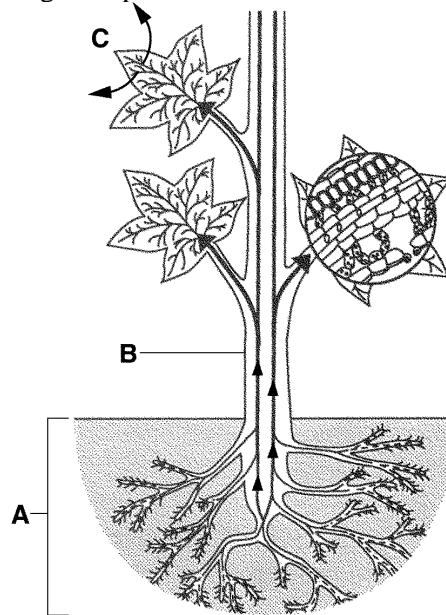
- a. Animalia
 b. Archaeobacteria
 c. Fungi
 d. Plantae

10. Which of the following lists the levels of ecological organization from *specific* to *general*?
- a. Community → ecosystem → individual → population
 b. Ecosystem → community → population → individual
 c. Population → ecosystem → individual → community
 d. Individual → population → community → ecosystem

11. A scientist takes field notes on a newly discovered organism. The field notes read: “Organism is prokaryotic, unicellular...lives in hydrothermal vents with temperatures exceeding 90C, has a cell wall without peptidoglycan...has simple homeostasis processes”. In which kingdom should this organism be classified and which example is correct?

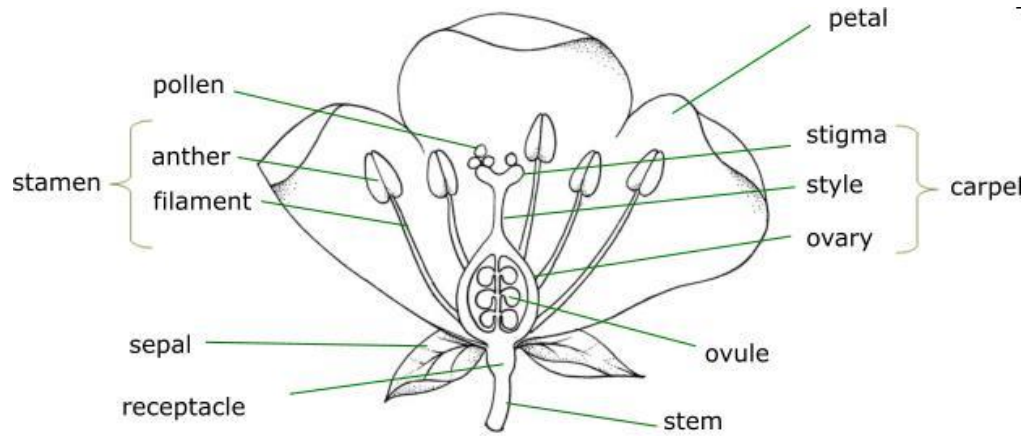
- a. Protista; *Streptococcus*
 b. Fungi; amoeba
 c. Eubacteria; mesophiles
 d. Archaeobacteria; hyperthermophiles

___ 12. What do the arrows at point C in the figure represent?



- a. tropism
- b. growth
- c. transpiration
- d. all of the above

___ 13. Which plant structure releases pollen?

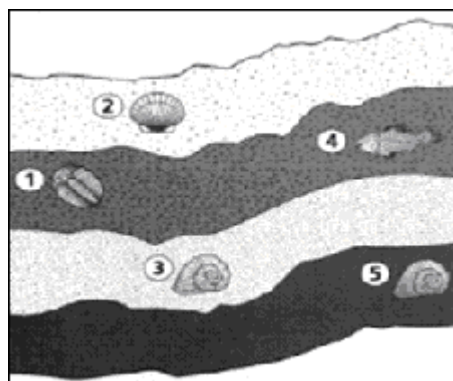


- a. carpel/pistil
- b. ovule
- c. anther
- d. sepal

| Organism | House cat | Red fox | Dog | Wolf | Gopher | Fly |
|----------|----------------------|-----------------|----------------------|-----------------|------------------|---------------------|
| Kingdom | Animalia | Animalia | Animalia | Animalia | Animalia | Animalia |
| Phylum | Chordata | Chordata | Chordata | Chordata | Chordata | Arthropoda |
| Class | Mammalia | Mammalia | Mammalia | Mammalia | Mammalia | Insecta |
| Order | Carnivora | Carnivora | Carnivora | Carnivora | Rodentia | Diptera |
| Family | Felidae | Canidae | Canidae | Canidae | Geomyidae | Muscidae |
| Genus | <i>Felis</i> | <i>Vulpes</i> | <i>Canis</i> | <i>Canis</i> | <i>Thomomys</i> | <i>Musca</i> |
| Species | <i>F. domesticus</i> | <i>V. fulva</i> | <i>C. familiaris</i> | <i>C. lupus</i> | <i>T. bottae</i> | <i>M. domestica</i> |

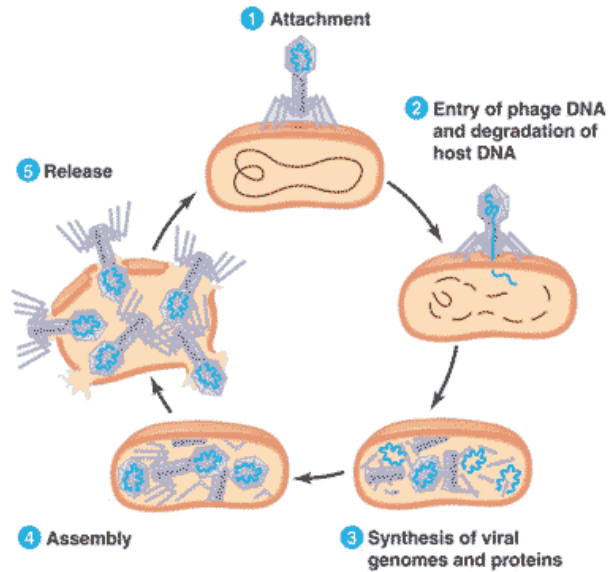
Table 17-2

14. Using Table 17-2, which 2 animals are the most alike?
- house cat and red fox
 - house cat and gopher
 - red fox and dog
 - red fox and wolf
 - wolf and dog
15. Use the diagram below to answer the following question. If fossil 1 is an index fossil and is known to be 250,000 years old, what can be inferred about fossil 2?



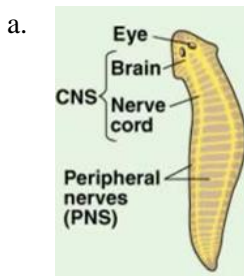
- It is less than 500,000 years old
- It is more than 500,000 years old
- It is about 500,000 years old
- Its age cannot be inferred

___ 16. The diagram below represents which of the following?

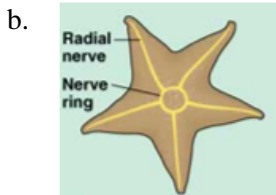


- a. viruses consuming cells to obtain energy during the lytic cycle
- b. viruses consuming cells to obtain energy during the lysogenic cycle
- c. viruses forcing the cell to replicate viral genome and make its proteins during the lysogenic cycle
- d. viruses forcing the cell to replicate viral genome and make its proteins during the lytic cycle

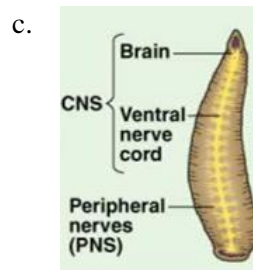
___ 17. Which of the following organisms does NOT show cephalization?



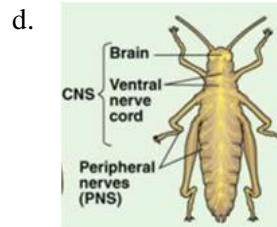
Flatworm



Sea Star

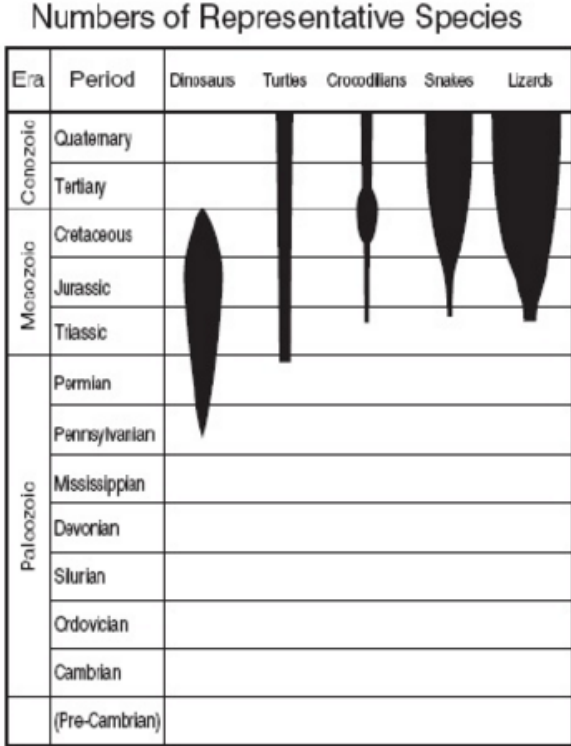


Leech



Insect

18. Review the table below. According to this information, which group demonstrated the greatest biodiversity during the Cretaceous period?

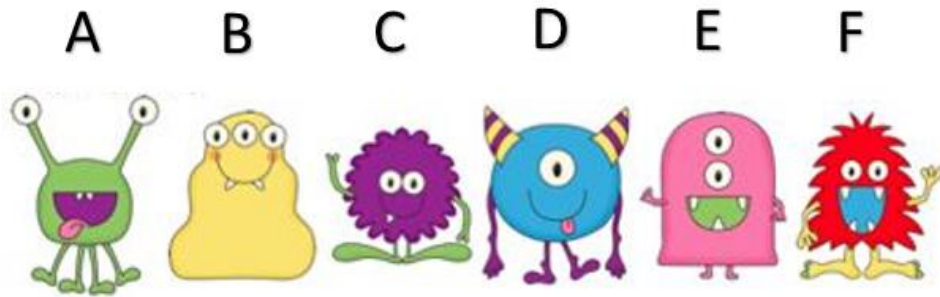


- a. turtles
- b. crocodiles
- c. dinosaurs
- d. lizards

19. In punctuated equilibrium

- a. evolution occurs in rapid bursts of change alternating with long periods in which species remain relatively unchanged
- b. small changes in the genome of individuals eventually lead to the evolution of a population
- c. profound change over the course of geologic history is the result of an accumulation of slow, continuous processes
- d. when two species compete for a single resource in the same environment, one of them will gradually become extinct

___ 20. Use the following dichotomous key to identify Organism C.



- 1 a. Mouth open go to 2
b. Mouth not open go to 4
- 2 a. Arms go to 3
b. No Arms *Alienus quadlegicus*
- 3 a. Hairy *Alienus hairicus*
b. Not hairy *Alienus tritoothicus*
- 4 a. No horns go to 5
b. Horns *Alienus stripicus*
- 5 a. No legs *Alienus blobicus*
b. Legs *Alienus fuzzicus*

- a. *Alienus fuzzicus*
- b. *Alienus blobicus*

- c. *Alienus hairicus*
- d. *Alienus stripicus*

**Biology Milestone: Unit 1 Topics (Organization)
Answer Section**

MULTIPLE CHOICE

- | | |
|------------|--------|
| 1. ANS: D | PTS: 1 |
| 2. ANS: C | PTS: 1 |
| 3. ANS: C | PTS: 1 |
| 4. ANS: A | PTS: 1 |
| 5. ANS: C | PTS: 1 |
| 6. ANS: C | PTS: 1 |
| 7. ANS: B | PTS: 1 |
| 8. ANS: C | PTS: 1 |
| 9. ANS: D | PTS: 1 |
| 10. ANS: D | PTS: 1 |
| 11. ANS: D | PTS: 1 |
| 12. ANS: C | PTS: 1 |
| 13. ANS: C | PTS: 1 |
| 14. ANS: E | PTS: 1 |
| 15. ANS: A | PTS: 1 |
| 16. ANS: D | PTS: 1 |
| 17. ANS: B | PTS: 1 |
| 18. ANS: D | PTS: 1 |
| 19. ANS: A | PTS: 1 |
| 20. ANS: A | PTS: 1 |