

## Principles of Taxonomy Review Questions

1. Give three reasons why taxonomy is important.
2. Why is the use of scientific names important?
3. How are organisms named in this system?
4. Why is phylogeny sometimes called the foundation of taxonomy?
5. How did Darwin's ideas affect classification systems?
6. Many of the classifications used by Linnaeus are still in use today, even though he did not know about evolution. Explain why this is so.
7. *Homo* is to genus as *sapiens* is to \_\_\_\_.
8. Related genera are grouped together in a \_\_\_\_.
9. What is the relationship between a family and an order?
10. If two animals are in the same class, what other categories must they share?
11. *Panthera leo* (lion), *Canis latrans* (coyote), *Panthera tigris* (tiger), and *Procyon lotor* (raccoon) are all members of the order Carnivora. Which two members are the most closely related?
12. How was the introduction of classification keys a major contribution to taxonomy?
13. Explain how a classification key is organized?
14. What things seem to be the most important for determining which kingdom an organism will be placed in?
15. How has technology affected classification?
16. In addition to physical appearance, what else do modern taxonomists consider?
17. Which kingdom(s) contain(s) prokaryotic organisms?
18. Why is kingdom Protista considered the "odds and ends" kingdom?
19. Suppose you were a microbiologist who had just discovered a new organism. The organism was unicellular, lacked chloroplasts, and had no cell wall. Which kingdom would you place it in?
20. Use the descriptions below to classify each organism in the correct kingdom:
  - a) multicellular, photosynthetic, cell walls of cellulose.
  - b) Cell wall lacks peptidoglycan, live in extreme environments and survive only in the absence of oxygen.
  - c) unicellular, eukaryotic organisms with chloroplasts.
21. Both snakes and worms are tube-shaped with no legs. How could you determine whether the similarity in shape means that they share a recent common ancestor?
22. You are hanging out in the rain forest of Costa Rica and you notice some beetles. Beetles A and B are quite similar but have different markings on their wings. Also, both beetles resemble a third beetle, beetle C that has been previously described. How could you use DNA to determine whether beetles A and B are more closely related to one another or to beetle C?

23. Complete the following table (you may have to look up some organisms):

Characteristics	Euglena	Mushroom	Crab	Bread Mold	E. coli	Violet	Paramecium	Dog
Unicellular								
Multicellular								
Autotroph								
Heterotroph								
Organ systems								
Chlorophyll								
Cell walls								
Walls of cellulose								
Walls of chitin								
Organelles lack membranes								
Kingdom								

24. Of course, we're animals. Thinking about your own personality, which kingdom do you see yourself identifying with? Why?