Spontaneous Generation/Biological Hierarchy Quiz

1. (2 points) Which statement is FALSE about spontaneous generation theory?
   a. Redi proved spontaneous generation theory by showing that maggots come from meat, not from other flies.
   b. Spontaneous generation is a theory that life forms can be generated from non-living objects
   c. When microbes grew in Needham’s flask of broth, he proposed it was an example of spontaneous generation occurring in microorganisms.
   d. Louis Pasteur’s swan-neck flask experiment demonstrated that spontaneous generation does not occur.

2. (2 points) Lazzaro Spallanzani and Louis Pasteur both performed experiments hoping to disprove spontaneous generation. What conditions existed in Pasteur’s experiment that did not exist in Spallanzani’s?
   a. Air could enter the flasks but no microorganisms could enter.
   b. No air could enter the flasks, but microorganisms could enter.
   c. Neither air nor microorganisms could enter the flasks.
   d. Both air and microorganisms could enter the flasks.

3. (2 points) In an experiment, a scientist filled two open flasks, as shown in the figure to the right, with broth and boiled the broth until it became clear. He then left the flasks open for several days. Which results showed that spontaneous generation did NOT occur?
   a. The broth in both Flasks A and Flask B remained clear.
   b. The broth in both Flask A and Flask B became cloudy.
   c. The broth in Flask A remained clear, and the broth in Flask B became cloudy.
   d. The broth in Flask A became cloudy, and the broth in Flask B remained clear.

4. (2 points) Who conducted the following experiment?
   a. Francesco Redi
   b. John Needham
   c. Lazzaro Spallanzani
   d. Louis Pasteur

5. (2 points) John Needham performed an experiment testing spontaneous generation. He boiled chicken broth, placed it in a sterile flask, and then sealed the flask. After a few days, Needham observed microorganisms in the flask. Based on current understanding, how was his experiment flawed?
   a. Boiling activated dormant microorganisms present in the broth.
   b. He did not boil the broth long enough to kill all microorganisms present.
   c. Microorganisms entered the broth from the flask itself after the flask was sealed.
   d. After Needham boiled the broth, microorganisms entered the air.
Spontaneous Generation/Biological Hierarchy Quiz

Use the back of your bubble sheet to answer the following questions:

6. (10 points) Using the following word bank, arrange the thirteen (13) steps in the biological hierarchy, in order from least complex to most complex.
   a. Ecosystem
   b. Biosphere
   c. Cell
   d. Tissue
   e. Population
   f. Atom
   g. Organ system
   h. Organelle
   i. Population
   j. Molecule
   k. Community
   l. Organ
   m. Organism

7. (10 points) Give an example of each level of the biological hierarchy.

8. (1 points) Where in this hierarchy does life emerge?

9. (2 points) What is the difference between a population and a community?

10. (2 points) What is the difference between an organ and an organelle?