

Prepare for Exam 1 by reviewing the following questions. Five of these questions will be found on the exam, of which three must be answered for credit.

1. Consider water. How do its properties contribute to its ability to crack a boulder when it freezes? To its ability to move upwards in a tree?
2. Some scientists propose that Silicon might be a suitable alternative to Carbon as the basic atom that forms the “backbone of life”. Why is this?
3. Compare and contrast hydrolysis and dehydration synthesis reactions.
4. Compare and contrast nucleic acids with the other biological molecules.
5. State the most important function of proteins. Support your selection with a logical argument.
6. Describe three functions of the cell membrane.
7. Compare and contrast facilitated diffusion with active transport.
8. What is a proton pump and what function does it have for a living cell?
9. With a simple sketch, illustrate how transmembrane proteins are positioned in the endoplasmic reticulum, vesicles, the Golgi, and ultimately in the plasma membrane as they move through the cell to be positioned after they are produced.
10. Compare and contrast prokaryotic and eukaryotic cells.
11. State the most important organelle. Support your selection.
12. Evaluate the following statement and either provide support for it or argue against it:
Ancestral eukaryotic cells must have been able to perform endocytosis and exocytosis.