

## 7.012 Fall 2004 Section Self-quiz

1) Label the parts of the cell below.

Golgi apparatus  
 lysosome  
 mitochondrion

nucleolus  
 nucleus  
 plasma membrane

ribosomes on rough ER  
 rough endoplasmic reticulum (RER)  
 smooth ER

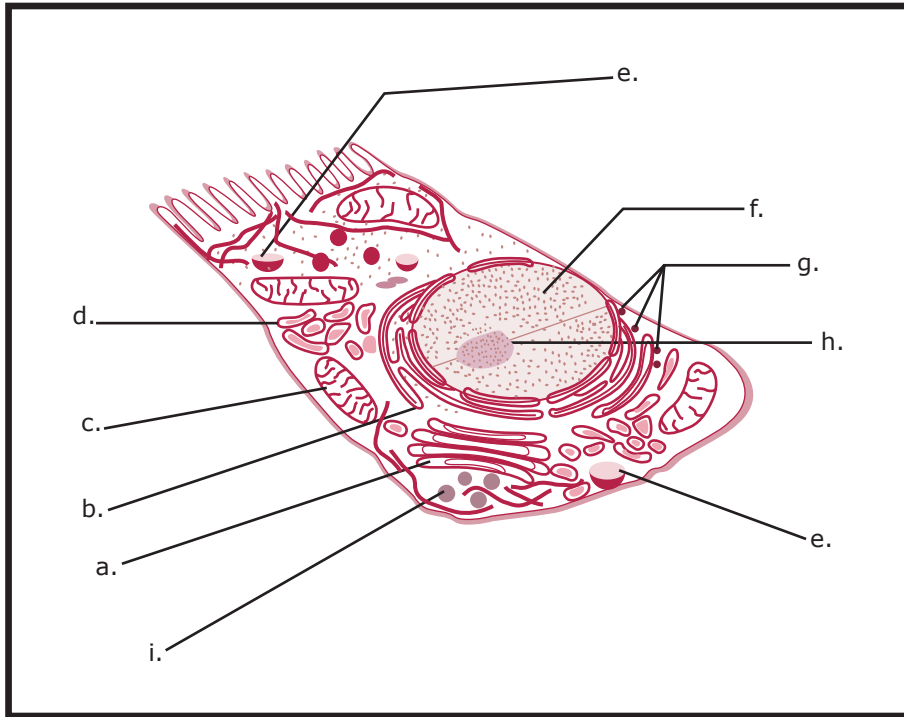


Figure by MIT OCW.

2) Describe briefly how each labeled answer functions.

3 a) Label the parts of the eukaryotic cell on the diagram below using the following list.

nucleus  
 golgi apparatus  
 mitochondrion

cytoplasm  
 smooth  
 ribosomes on rough endoplasmic reticulum  
 free ribosomes

endoplasmic reticulum  
 plasma membrane  
 endoplasmic reticulum

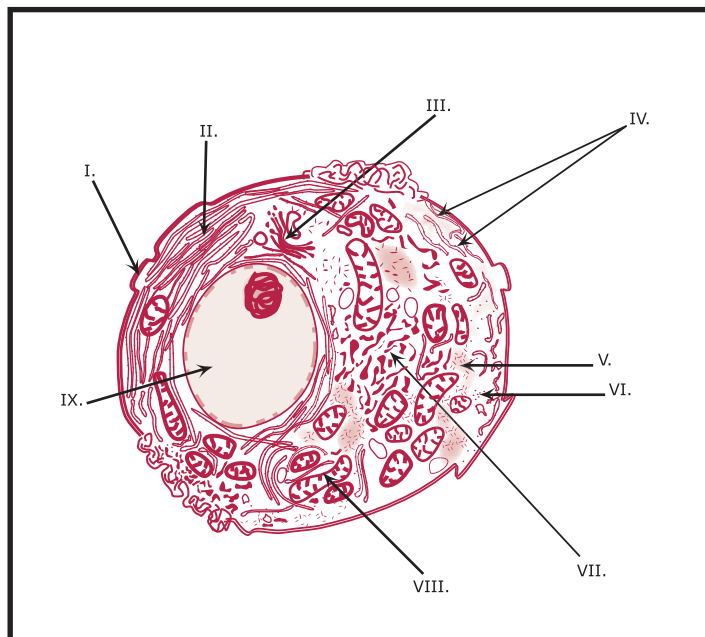


Figure by MIT OCW.

3 b) How do prokaryotic cells differ from eukaryotic cells? (Note the prokaryotic cell is much much smaller than the eukaryotic cell but they are both drawn so that you can see and compare internal components.)

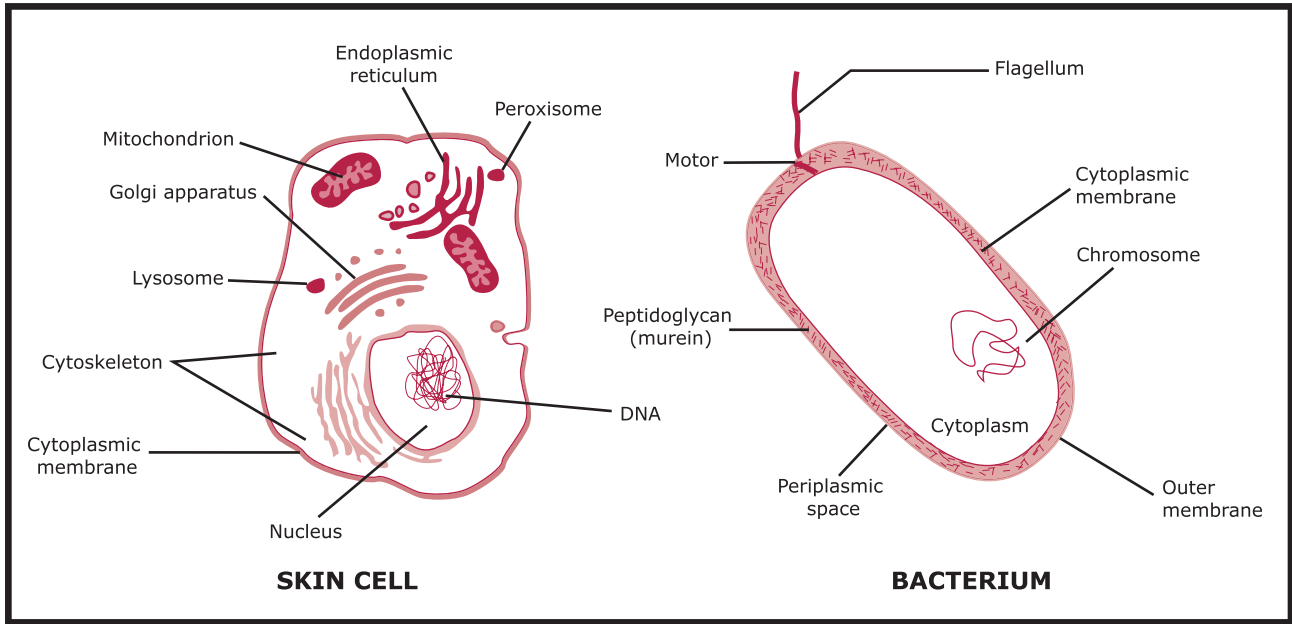


Figure by MIT OCW.

4) Currently, scientists estimate that life first appeared on approximately \_\_\_\_\_ years ago.

5) A key point in the theory of evolution is: slight variations among individuals significantly affect the chance that a given individual will survive in its environment and reproduce.

These variations among individuals are due to \_\_\_\_\_ .

6) Surface tension occurs in water because it has \_\_\_\_\_ .

7) The building blocks of DNA are \_\_\_\_\_ .

8) The building blocks of proteins are \_\_\_\_\_ .

9) All cells have a membrane composed of \_\_\_\_\_ .

10) In the process of glycolysis, cells make energy in the form of \_\_\_\_\_ .

11) Oxidation and \_\_\_\_\_ occur together.

12) What is a gene?

13) The "Central Dogma" states that information flow in the cell is from DNA to \_\_\_\_\_ to \_\_\_\_\_ .

14) Are the genes in your eye cells the same or different than the genes in your gut cells?

15) Are the proteins in your eye cells the same or different than the proteins in your gut cells?