Paleontologists have found fossils dating back 3.6 billion years. These closely resemble

A) nothing alive today.  
B) today’s simplest plants.  
C) fungi.  
D) blue-green algae present today.  
E) small invertebrate animals

The endosymbiont hypothesis suggests that the mitochondria of eukaryotic cells are descended from captured

A) archaebacteria.  
B) cyanobacteria.  
C) eukaryotic algae.  
D) chemoautotrophic bacteria.  
E) aerobic bacteria.

Eukaryotic cells are thought to have

A) developed when mitochondria grew much larger in size that they had been previously.  
B) first appeared as parts of multicellular organisms.  
C) appeared about 2.1 billion years ago.  
D) evolved before prokaryotic cells.  
E) first appeared with tough cell walls

Of the following, which kingdom contains the most diversity in terms of DNA sequences?

A) Protista  
B) All of these are approximately equivalently diverse.  
C) Animalia  
D) Plantae  
E) Fungi

Atmospheric chemists think that Earth’s first atmosphere

A) consisted of carbon in the form of carbon monoxide.  
B) contained nitrogen in the form of ammonia and nitrogen gas.  
C) was very similar to today’s atmosphere.  
D) consisted of carbon in the form of carbon monoxide.  
E) contained no oxygen atoms

In bacteria, the cell wall is composed mainly of

A) peptidoglycans.  
B) lipids.  
C) proteins.  
D) glycoproteins.  
E) various polysaccharides

What is the main difference between protists and bacteria?

A) Bacteria are always gram-negative, protists are gram-positive  
B) Bacteria have DNA, protists do not.  
C) Protists cannot cause infections, bacteria can  
D) Protists have a nucleus, bacteria do not  
E) Protists are unicellular, bacteria are multicellular.

The Cambrian Explosion provided a wealth of fossil remains for scientists to uncover. Many of the animals from this time period had tough skins or shells. This would

A) be a disadvantage for these organisms and lead to their death and fossil formation.  
B) allow the animals to move into different environments easily.  
C) protect the animal from osmotic pressure.  
D) protect the animal from predators.  
E) make these animals more desirable to predators

Some bacteria can form resting structures called \_\_\_\_\_\_\_\_\_\_\_ that can withstand extremes in temperature, moisture, and radiation.

A) symbionts  
B) endospores  
C) viroids  
D) capsids  
E) prions