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Chapter Outline

Section 1 Questions

What are the similarities and differences between Earth's early environment and Earth's current environment?

Some differences is that Earth's early environment was a molten body, the surface was rich in lighter elements, such as silicon, and included a number of volcanic features. The current Earth is cooler as in temperature and it can substain life. The similarities are that they both have volcanoes and that Earth is still being formed. Also Early and current Earth have the same gases in the atmosphere. Anothe difference is that early Earth had little or no free oxygen.

What is a typical sequence of events in fossilization?

The typical sequence of events in fossilization are that first the organism dies and is buried in sediments. The sediments build up until they cover the organism's remains. In some cases, minerals replace the organic matter or fill the empty pore spaces of the organism. In other cases, the organism decays, leaving behind an impression of it's body. The sediments eventually harden into rock.

How are the different techniques for dating fossils used?

The different techniques for dating fossils are Relative dating and Radiometric dating. Relative dating is a method used to determine the age of rocks by comparing them with those in other layers. Relative dating is based on the law of superposition, which states that younger layers of rock are deposited on top of older layers. Radiometric dating uses the decay of radioactive isotopes to measure the age of a rock. The method requires that the half-life of the isotope is known. The relative amounts of the radioactive istope and it's decays product must also be known.

What are the major events on the geologic time scale?

In the paleozoic Era all body plans arise, first vertebrates and plants appeared. Also invertebrates are dominant, land plants and insects also bony fish appear. Reptiles scatter. In the Mesozoic Era first mammals, dinosours and birds appear. And in the Cenozoic Era climate is tropical, most mammal order exist, monkeys, Apes, hominins and modern humans appear. The ice age and humans civilize. Also the massive extinctions and the K-T boundary.

Section 1 Vocabulary

Fossil - is any preserved evidence of an organism

Paleontologists - is a scientists who studies fossils.

Law of Superposition - Younger layers of rock are deposited on top of older layers.

Radiometric Dating - uses the decay of radioactive isotopes to measure the age of a rock

Half-life - is the amount of time it takes for half of the orginal istope to decay, is known, the relative amount of the radioactive istope and it decay product must also be known

Geologic time Scale - is a record of Earths history. Major geological and biological events in Earth's history can be identified within the geologic time scale.

Epoch - Last several million years, are the shallest units of geologic time.

Period - Last tens of millions of years, are divisions of geologic time consisting of two or more epochs.

Era - which lasts hundreds of millions of years, is a unit of geologic time consisting of two or more periods.

Eon - is the longest unit of time in the geologic time scale and can include billions of years.

Cambrian explosion - The rapid diversification of multicellular animal life that took place around

the beginning of the cambrian Period. It resulted in the appearance of almost all modern animal phyla.

K-T boundary - The primary evidence for this meteorite impact is found in a layer of materials between the rocks of the cretaceous period and the rocks of the paleogene period, the first period of the cenozoic era.

Plate-tectonics - describes the movement of several large plates that make up the surface of Earth. These plates, some of which contain continents, move atop a partially molten layer of rock underneath them.

Relative Dating - is a method used to determine the age of rocks by comparing them with those in other layers.

Section 2 Questions

What are the differences between spontaneous generation and biogenesis?

The difference between spontaneous generation and biogenesis, is that spontaneous generation is the idea that life arises from nonlife. And the theory of biogenesis states that only living organisms can produce other living organisms.

What might have been the sequence of events that led to cellular life?

The sequence ~~of these cells that organisms~~ to cellular life are Cyanobacteria eventually produced enough oxygen to support the formation of an ozone layer. Once an ozone shield was established, conditions would be right for the appearance of eukaryotic cells. (See pages 402-403)

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What is the endosymbiont theory?

Endosymbiont theory means the ancestor of eukaryotic cells lived in association or lived inside eukaryotes or prokaryotic cell. Prokaryotes could have entered a host cells as undigested prey, or they could have been internal parasites. Eventually, the relationship between the cells became mutually beneficial

and the prokaryotic symbionts became organelles in eukaryotic cells.

Section 2 Vocabulary

Spontaneous generation - is the idea that life arises from nonlife

Theory of Biogenesis - Only living organisms can produce other living organisms

Endosymbiont Theory - the ancestors of eukaryotic cells lived in association with prokaryotic cells. Prokaryotes even might have lived inside eukaryotes. Prokaryotes could have entered a host cell as undigested prey or they could have been internal parasites. Eventually, the relationship between the cells became mutually beneficial, and the prokaryotic symbionts became organelles in eukaryotic cells.