

What are the four major processes that are needed for spontaneous origin of life on earth?

What experiment did Urey and Miller conduct? Draw a sketch of their apparatus.

What is panspermia?

What locations on earth that might have allowed the synthesis of organic compounds?

What is a protobiont?

How could primitive prokaryotes have contributed to an oxygen rich environment?

What is the endosymbiotic theory? What evidence supports it?

What is a modern definition of evolution?

What are the major categories of evidence used to support evolution of species?

What is the difference between analogous and homologous structures?

How can biochemical evidence provided by the universality of DNA and protein structures be used to explain common ancestry?

How can variations in specific molecules be used to indicate phylogeny?

What are molecular clocks?

What significance is the overproduction of offspring to evolution?

How does Sexual Reproduction promote variation?

What is natural selection? How does it lead to evolution?

How does antibiotic resistance show evolution due to environmental change? What is another?

What is an allele frequency?

What is a gene pool? And relate it to how evolution occurs.

What is a modern definition of a species?

What are barriers between gene pools?

What is adaptive radiation?

What is the difference between divergent and convergent evolution? What drives it?

What are gradualism and punctuated equilibrium?

What is a transient polymorphism?

Why is sickle-celled anemia an example of a balanced polymorphism?

What are the characteristics of a non-evolving population?

What is the gene frequencies of a the carriers of a recessive disease if the frequency of the disease is $1/10,000$?

Why are organisms classified?

What is a clade? What are cladistics?

How can a cladogram be constructed and what can you conclude from the diagram?

How can Carbon 14 and Potassium 40 be used to date rocks and fossils? What is half life?

What are the anatomical features that make humans primates?

What are the trends of the fossils of *Ardipithecus ramidus*, *Australopithecus afarensis*, *A. africanus*, *Homo habilis*, *H. erectus*, *H. neanderthalensis*, and *H.sapiens*? Did any of the mentioned species overlap?

What uncertainties are there in the human fossil record?

What change was there in diet and brain size during hominid evolution?

What is the difference between genetic and cultural evolution? What role has the previous had on modern human evolution?