**Conversational Topic**

**The Main Branches of Modern Geology**

Geology is divided into several *fields*, which can be grouped into physical and historical geology.

***Physical Geology***

Physical geology includes ***mineralogy***, the study of the chemical composition and structure of minerals; ***petrology***, the study of the *composition* and *origin* of rocks; ***geomorphology***, the study of the origin of *landforms* and their *modification* by dynamic processes; ***geochemistry***, the study of the chemical composition of earth materials and the chemical changes that *occur* within the earth and on its surface; ***geophysics***, the study of the *behavior* of rock materials in *response* to *stresses* and according to the principles of physics; ***sedimentology***, the science of the erosion and *deposition* of rock particles by wind, water, or ice; ***structural geology***, the study of the *forces* that deform the earth's rocks and the *description* and *mapping* of deformed *rock bodies*; ***economic geology***, the study of the *exploration* and *recovery* of natural resources, such as *ores* and petroleum; and ***engineering geology***, the study of the *interactions* of the earth's crust with human-made structures such as tunnels, *mines*, dams, bridges, and building foundations.

***Historical Geology***

Historical geology *deals with* the historical development of the earth from the study of its rocks. They are analyzed to determine their structure, composition, and *interrelationships* and are examined for remains of past life. Historical geology includes ***paleontology***, the systematic study of past life forms; ***stratigraphy***, the study of *layered rocks* and their interrelationships; ***paleogeography***, the study of the locations of ancient land masses and their *boundaries*; and ***geologic mapping***, the *superimposing* of geologic information upon existing topographic maps.

Historical geologists divide all time since the formation of the earliest known rocks (c.4 billion years ago) into four major divisions – Precambrian time and the Paleozoic, Mesozoic, and Cenozoic eras. Each, except the Cenozoic, ended with *profound* changes in the disposition of the earth's continents and mountains and was characterized by the *emergence* of new forms of life. Broad cyclical patterns, which run through all historical geology, include a period of mountain and continent building followed by one of erosion and, in turn, by a new period of elevation.

**Активная лексика (в порядке встречаемости в тексте)**

**Field** область, отрасль

**composition** состав

**origin** происхождение

**landform** ландшафт

**modification** изменения

**occur** встречаться, происходить, иметь место

**behavior** поведение

**response** реакция

**stress** давление

**deposition** отложение

**force** сила

**description** описание

**mapping** картирование, картографирование

**rock body** тело породы, магматическое тело

**exploration** разведка

**recovery** извлечение, добыча

**ore** руда

**interaction** взаимодействие

**mine** шахта

**deal with** иметь дело с

**interrelationship** взаимоотношения

**layered rock** слоистая порода

**boundary** граница, рубеж

**superimposing** наложение, накладывание

**profound** выдающийся, серьезный, значительный

**emergence** появление

**Exercises**

**Ex. 1 Make sure that you know the meaning of the following words.**

Exploration, origin, layered rock, rock body, landform, behaviour, deposition, recovery, ore, mapping, mine, superimposing.

**Ex. 2 Say what branch of geology it is*.***

- the study of the interactions of the earth's crust with human-made structures such as tunnels, mines, dams, bridges, and building foundations;

- the systematic study of past life forms;

- the study of the locations of ancient land masses and their boundaries;

- the superimposing of geologic information upon existing topographic maps;

- the study of the chemical composition and structure of minerals;

- the study of the composition and origin of rocks;

- the study of the origin of landforms and their modification by dynamic processes;

- the study of the chemical composition of earth materials and the chemical changes that occur within the earth and on its surface;

- the study of the behavior of rock materials in response to stresses and according to the principles of physics;

- the science of the erosion and deposition of rock particles by wind, water, or ice

- the study of layered rocks and their interrelationship.

**Ex. 3 Finish the sentences.**

1. Physical geology includes …

2. Historical geology deals with …

3. Structural geology is …

4. Historical geology includes …

5. The main geologic eras include …

**Ex. 4. Translate into English.**

Делиться на (делится на), иметь дело с (имеет дело с), химический состав, динамические изменения, тоннели и шахты, дамбы и мосты, определять структуру, взаимоотношения, горообразование, в свою очередь, появление новых форм жизни.

**Ex. 5. Answer the following questions.**

1. What are the main branches of physical geology?

2. What are the main branches of historical geology?

3. What is economic geology?

4. What is paleontology?

5. What is geologic mapping?

6. What are the main periods of the geologic time?