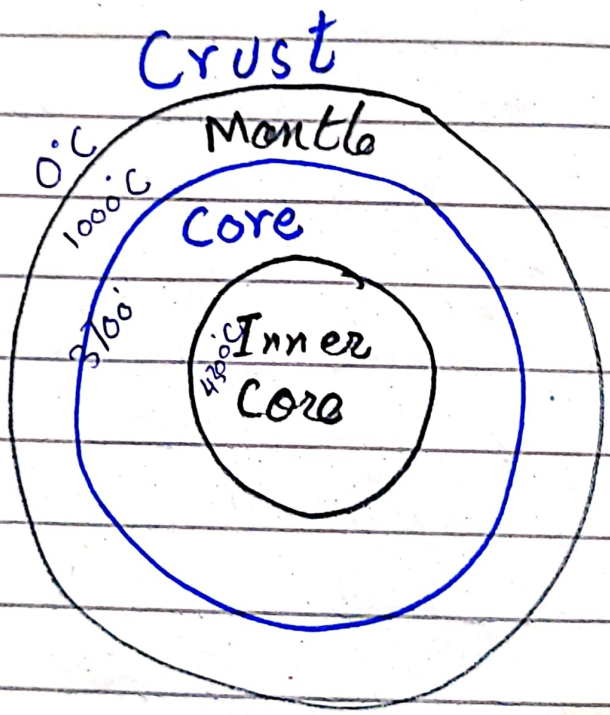
Explain the internal structure of earth.

1. **Introduction:**

The earth is composed of three main layers: the crust, mantle, and core. The crust, which includes the continents and ocean floor, is the outermost layer. Beneath the crust is the mantle, a semi-solid layer that extends to a depth of about 2,900 km. The core lies beneath the mantle and is divided into a liquid outer core and a solid inner core. The Earth's internal heat, generated by radioactive decay and residual heat from its formation, drives geological process like plate tectonics and volcanic activity.

2. **Internal Structure of Earth:**



Internal Structure of Earth

3. **Major Structural unit of Earth:**

There are three major

Structural unit of Earth

a. CRUST
b. Mantle
c. Core

a. Crust:

It is outermost and thinnest layer. It is relatively cool and consist of hard rocks.

i. Oceanic crust:

It is about 5-10km thick, basaltic composition is dominated by silica and magnesium. It's average density is $3 g/cm^3$

ii. Continental Crust:

The continental crust is

about 20-40 km thick, but under mountain it can be 70 km thick. It's average density is about 2.7 g/cm³

b. **Mantle**:

The mantle lies directly below the crust. It is almost 2900 km thick and makes up 80 percent of earth volume. Temperature and pressure increase with depth resulting strength of mantle rock to vary with depth and create layering within the mantle. The upper part of mantle consist of two layers

i. **Lithosphere**:

Outer part of the Earth including both

uppermost mantle and the crust make up the lithosphere. Its mechanical behavior is similar to that of the crust. Lithosphere is about 75 kms thick beneath ocean and 125 kms under the continents. Tectonic plate is a segment of lithosphere.

ii. **Asthenosphere**:

It extends from the base of the lithosphere to a depth of about 350kms. At the base of the lithosphere, increasing pressure causes the mantle to become mechanically stronger, and it remains so all the way to core.

c. **Core**:

The inner most layer

of the earth is called core. It is about 3500km in radius. It is the densest layer of the earth. It's main constituent elements are iron and nickel. The earth's core is divided into two parts: the liquid outer core and solid inner core.