**UNIT 6: LAND POLLUTION**

**What is Lithosphere?**

Solid component of earth is lithosphere. It is classified into three zones:

1. Crust
2. Mantle
3. Core

**1. CRUST**

Crust is the outermost part of the lithosphere. It contains different types of rocks. It mainly consists of O2, Al, Ca, Mg, Fe etc as major elements. The thickness of crust varies of 64 km up to 96 km and 70% of the crust is immersed in oceans and seas. The crust is sub-divided into two layers. The upper layer of the crust is lighter and is composed of mainly granite. The main components present in the rocks are mostly compounds of Si and Al. the average density of this part is 2.7 and extends up to 17km. It is also known as SIAL.

The lower layer of the crust is denser and is composed of Basalt rocks. The chief constituent of rocks are Si and Mg and the density of this part is 3.0 and it is also known as SIMA.

The imaginary line where the SIAL and the SIMA of earth’s crust meet with each other is known as Conrad Discontinuity.

**2. MANTLE**

It is just below the earth’s crust and the thickness is about 2880km. It is also divided into two parts.

The upper part of the mantle is lighter and is called as Asthenosphere. It is mainly composed of Cr, Fe, Si, Mg. Gravity of this layer varies from 3.0-3.5. It is also known as Crofesima. The molten rocks of magma found here and the way to the earth’s surface through cracks and faults.

The lower part of the mantle is heavier and also known as Mesosphere and density is 3.5 - 4.5. Main composition of the layers are Ni, Fe, Si. Mg and is also called as Nifesima.

The imaginary line where the crust meets the mantle is called Mono Discontinuity.

**3. CORE**

It is the central or innermost part of lithosphere also called as Barysphere (Sphere of Weight.) The thickness of core is ~~ 3500km. Temperature mass and density of this part is very high than that of other two parts of lithosphere. It is divided into two parts.

Outer layer of core contains molten metal and thickness is about ~~2250 km and the inner later of core is relatively more solidified (compact metallic mineral) and thickness is about ~~ 1250 km. The major components of core are Fe, Ni along with some minor components S, Si, Co etc. The temperature of core is 5000 – 5500° C.

The imaginary line where mantle meets the core is called Gutenberg Discontinuity.

**Classification of Rocks**

**Igneous Rocks**

Comes from Greek word Igneous meaning fire. It is the primary rock or the ancestor of all other rocks. 80% of earth’s crust is made up of this rock. Due to sudden release in pressure, the heavier and denser materials of earth’s interior turn molten (magma) and comes out on the earth’s surface as lava. Then it pulls rapidly and forms fine grained volcanic rock.

Example – Granite aka Plutonic Rock.

**Sedimentary Rocks**

Comes from Latin word sedimentation meaning settling down. The primary igneous rocks undergo weathering due to fast winds and rainfall and the sediments undergo physical and chemical changes to form sedimentary rocks.

Example – Shell, Sandstone, Coal.

**Metamorphic Rocks**

Comes from Greek word metamorphosis meaning ‘changes of form’.