ROCKS AND SOILS

Rocks

- The earth's crust (Lithosphere) is composed of rocks. An aggregate of minerals on the Earth's crust is called 'rock'. It may be hard and compact like 'granite' or soft as 'clay' or loose as 'sand'.
- The scientific study of rocks is called **petrology.**
- Based on formation, rocks are classified as:
    - Igneous
    - Sedimentary
    - Metamorphic

Igneous Rocks

- The igneous rocks are formed by the solidification of molten magma. These rocks are also called as the 'Primary Rocks' or 'Parent Rocks' as all other rocks are formed from these rocks.
- They do not contain fossils.
- They are associated with the volcanic activities.
- These rocks are useful for construction work.
- Granite, pegmatite, basalt, etc are some of the examples of igneous rocks

Sedimentary Rocks

- It is formed due to the aggregation and compaction of sediments derived from the older rocks, plants, animals and contain fossils of plants.
- The bodies of plants and animals that fall on the deposits get embedded in the layers and form Fossils. Sandstone, limestone, chalk, gypsum, coal and conglomerate are examples of sedimentary rocks.

Metamorphic Rocks

- These are changed form of igneous and sedimentary rocks.

Sedimentary rocks	Metamorphic rocks
Lime stone	Marble
Sandstone	Quartzite
Shale/clay	Slate, Schist
Coal	Diamond

- When Igneous or sedimentary rocks are subjected to extreme heat and pressure, they undergo a complete change in their form and character.
- Rocks are useful for making – Cement, Writing chalk, Fire, Building materials, Bath scrub, Kerb stone, Ornament, Roofing materials, Decorative materials.

- Rocks are valuable source of minerals such as gold, diamond, sapphire etc.

Soils

- Soil is a mixture of organic matter, minerals, gases, liquids and organisms that together support life. It is known as the 'skin of the earth'.
- Soils are produced from rocks (parent material) through the processes of weathering and natural erosion.
- World Soil Day is observed on 5th December.
- The basic components of soil are mineral, organic matter, water and air. It consists of about 45% mineral, 5% organic matter, 25% of water and 25% air.
- Soils are classified on the basis of their formation, colour, physical and chemical properties.
- Based on these, soil is classified into six major types. They are: Alluvial soil, Black soil, Red soil, Laterite soil, Mountain soil, Desert soil.

Alluvial Soil

- Alluvial soils are found in the regions of river valleys, flood plains and coastal regions.
- These are formed by the deposition of silt by the running water. It is the most productive of all soils.
- It is suitable for the cultivation of sugarcane, jute, rice, wheat and other food crops.

Black Soil

- These soils are formed by weathering of igneous rocks.
- Black soil is clayey in nature. It is retensive of moisture.
- It is ideal for growing cotton.

Red Soil

- These soils are formed by weathering of metamorphic rocks and crystalline rocks.
- The presence of iron oxide makes this soil brown to red in colour.
- It is suitable for millet cultivation.

Laterite Soil

- These are the typical soils of tropical regions. These soils are found in the regions which experienced alternate wet and dry condition.
- It is suitable for plantation crops of tea and coffee.

Mountain Soil

- Mountain soils are found over the slopes of mountain.

Desert Soils

- These are sandy soil found in the hot desert regions. These soils are porous and saline.
- Since it is infertile, agriculture in these soils are not so successful.