**ROCKS AND MINERALS**

ROCKS

Rocks are hard solid parts of the earth’s crust which are a combination of solid mineral particles such as gravel, iron oxide, quartz which form most of the outer layer

OR

Rocks are aggregates of minerals that exist in solid state.

**Types of rocks.**

Igneous rocks

Sedimentary rocks

Metamorphic rocks

**Igneous rocks**

These are rocks formed from the cooling and solidification of magma that come from the interior of the earth.

**Formation of igneous rocks**

Igneous rocks are formed either under or above the ground. Underground igneous rocks are formed when magma deep within the earth’s crust becomes trapped in small pockets and cool slowly underground. Above the ground, igneous rocks are formed when magma is ejected outside onto the earth’s surface and cool from there.

**Examples of igneous rocks.**

Granite

Basalt

**Characteristics of igneous rocks**

They are formed by the cooling of magma which solidifies into or on to the earth’s crust

The contain crystals after cooling

They do not contain strata (layers)

They do not have fossils

**Sedimentary rocks**

These are rocks formed from the remains of previously existing weathered rock fragments, dead plants and animals that have been eroded.

**OR**

Sedimentary rocks are rocks formed from the sediments which breakdown from other rocks.

**Mechanically formed sedimentary rocks**

These rocks are formed when inorganic rock particles are weathered, eroded, deposited and compacted in layers. The layers are composed of graded sizes with large particles on the top laser medium particle in the middle layer and the small particles in at the bottom layer.

These layers are later cemented by carbonates and iron oxide solution forming a compact rock.

**Chemically formed sedimentary rocks.**

These rocks are formed from precipitation and evaporation of salt solutions, eg rock salt and saline rocks in oceans.

Water sometimes dissolve minerals and transports them in solution and when water gradually evaporates , the dissolved minerals precipitate out and accumulate to form rocks.

**Organically formed sedimentary rocks.**

These rocks are formed from the decomposition of animal and plant remains, which accumulate over time when plants and animals die.

The remains of this organic matter contain calcium carbonate and iron oxide which cement their skelotons to form sedimentary rocks.

**Example of sedimentary rocks**

Limestone

Sandstone

Shale

**Characteristics of sedimentary rocks**

They contain fosssils

They are formed from pre-existing rocks as a result of weathering

Sedimentary rocks occur in layers

**Metamorphic rocks**

These are rocks formed when sedimentary or igneous rocks are subjected to chemical or physical under the conditions of high heat and pressure.

**Example of metamorphic rocks**

Slate formed from clay by pressure

Marble formed from limestone by heating

Gnesis formed from granite due heat and pressure

Quartzite formed from sand due to heat and pressure

Graphite formed from heat and pressure

**Differences between igneous, sedimentary and metamorphic rocks**

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| --- | --- | --- |
| **Igneous** | **sedimentary** | **metamorphic** |
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