**Q,Types of Rock?**

**ANS =**Rocks are categorized into three main types based on their formation processes: igneous, sedimentary, and metamorphic. Each type has distinct characteristics, origins, and roles within the Earth’s geology.

**1.Igneous Rocks**

Igneous rocks form from the cooling and solidification of molten rock material, either magma or lava. They are classified into two primary categories:

**\*Intrusive (Plutonic) Rocks** These rocks form when magma cools slowly beneath the Earth’s surface. The slow cooling allows large crystals to form, giving these rocks a coarse-grained texture. Common examples include granite, which is often light-colored and rich in quartz and feldspar, and diorite, which has a mix of light and dark minerals.

**\*Extrusive (Volcanic) Rocks** These rocks form when lava erupts onto the Earth’s surface and cools quickly. This rapid cooling results in fine-grained textures, often too small for the naked eye to see. Common examples include basalt, which is typically dark and dense, and pumice, a light, porous rock formed from rapidly cooled lava that trapped gas bubbles.

**2.Sedimentary Rocks**

Sedimentary rocks are formed from the accumulation and compaction of sediments, which can consist of mineral particles, organic matter, and chemical precipitates. They are classified into three main types:

**\*Clastic Sedimentary Rocks** These rocks are made up of fragments of other rocks and minerals that have been cemented together. Sandstone, formed from sand-sized particles, and shale, composed of finer mud particles, are typical examples. Clastic rocks often exhibit layering, reflecting the conditions under which they were deposited.

**\*Chemical Sedimentary Rocks** Formed through chemical processes, these rocks develop when dissolved minerals precipitate out of water. A common example is limestone, which can form from calcite precipitating from seawater, often accumulating from the remains of marine organisms.

**\*Organic Sedimentary Rocks** These rocks consist primarily of the remains of living organisms. Coal, for instance, is formed from decayed plant material that has been subjected to heat and pressure over millions of years.

**3.Metamorphic Rocks**

Metamorphic rocks originate from existing rocks—igneous, sedimentary, or other metamorphic rocks—that have undergone transformation due to high temperature, pressure, or chemically active fluids. They are classified into:

**\*Foliated Metamorphic Rocks** These rocks exhibit a banded or layered appearance due to the alignment of minerals under pressure. Schist, with its shiny mica flakes, and gneiss, which has distinct bands of light and dark minerals, are prime examples.

**\*Non-foliated Metamorphic Rocks** Lacking a layered texture, these rocks consist of interlocking minerals. Marble, which forms from limestone, and quartzite, formed from sandstone, are notable examples.

Understanding these rock types provides insight into the dynamic processes shaping the Earth and highlights the interconnectedness of geological systems within the rock cycle.