**-IGNEOUS ROCKS**

Molten rock material which is generated within or below the earth`s crust, reaches the surface from time to time and flows out from volcanic orifices as stream of lava. Similar material which does not reach the surface may, on the other hand, be injected into the rocks of the crust, given rise to a great variety of igneous intrusions which slowly cool and solidify, these are the igneous rocks

The texture, or relative size and arrangement of the component minerals, of an igneous rock correspond broadly to the rock’s mode of occurrence. Plutonic rocks; which have cooled slowly under a cover perhaps several miles thick, are entirely crystalline or holocrystalline: their component crystal are large (2to 5mm,or more) and can easily be distinguished with the naked eye . Rocks of medium or fine grain generally have crystals less than 1 mm. across. When the texture is so fine that individual crystals are indistinguishable without the aid of microscope it is called microcrystalline, and when even the microscope fails to resolve the rock into its component minerals, yet its crystalline nature is apparent between crossed nicols, it is said to be cryptocrystalline. These textures are all even – grained, composed mainly of crystals of much the same.

Composition of igneous rocks: the mineral composition and color of rock are related to their chemical composition, when the chemical analyses of an acid rock like granite and of basic rock ( e.g basalt) are compared, important differences are seen, such as the greater proportion of silica and alkalies (Na2O and K2O) in the acid rock ,and the higher content of lime . Magnesia and iron oxide are averages of averages of a large number of analyses.

During the cooling of magma, the different constituents unite to form crystals of silicate and other minerals, in a basic magma, for example minerals like olivine and magnetite may be the first to crystallize m and they take up some of the silica, magnesia, and iron oxide, the remainder of the magnesia and iron is used up later in augite. And dark mica.

When magma contains enough silica to combine fully with all the metallic bases and still leave some over, it is said to be oversaturated, the excess silica crystallizes as quartz, and an igneous rock which contains quartz is called oversaturated rock .e.g granite. Minerals which can exist in a rock in the presence of free silica are said to be saturated.