

I BA PRACTICAL

GEOMORPHOLOGY practicalrecord

EXACIESE :1 IDENTIFICATOPN OF ROCKS AND MIMERALS

- ▶ Rocks : rocks are natural solid substance that are found in the earth's surface. rock may be hard like granite or soft like limestone. It may be porous like sandstone or non porous like shale.
- ▶ The scientific study of rocks called petrology. Rocks are also called aggregate of minerals. But all rocks are not minerals and all minerals are not rocks. A rock is a mass of one mineral or a mixture of minerals or organic matter .limestone is a rock consisting of only one mineral , granite is a rock composed of three minerals(quartz, feldspar, mica). Coal is a rock without any minerals.
- ▶ Rocks are classified into 3 basic types on the basis of origin;
- ▶
 1. igneous rocks/ primary rocks
 2. sedimentary rocks/ secondary rocks/aqueous rock
 3. metamorphic rocks

Classification of Rocks

Igneous

Intrusive

- . Gabbro
- . Diorite
- . Granodiorite
- . Granite

Extrusive

- . Basalt
- . Andesite
- . Dacite
- . Rhyolite

Sedimentary

Clastic

- . Conglomerate
- . Breccia
- . Sandstone
- . Siltstone
- . Shale
- . Mustone

Biological

- . Coal
- . Chert

Chemical

- . Limestone
- . Dolostooone

Metamorphic

Foliated

- . Slate
- . Schist
- . Gneiss

Non-foliated

- . Quartzite
- . Marble

1. Igneous rock: formed by cooling of lava and magma on the surface of earth and in crust. this rocks classified into two types on basis of occurrence:

- ▶ a)intrusive rocks; formed below the earth's surface by solidification of magma. ex-granite diorite. Granite, Gabbro, Diorite ,Dyke
- ▶ B) extrusive rocks: formed on the surface of earth by cooling of lava. ex- basalt

2. Sedimentary rocks: The accumulation and consolidation of sediments form sedimentary rocks. These rocks are also known as Stratified rocks (Strata). Classified into three types;

- a. clastic/ mechanical formed ; Sandstone, Shale, Conglomerate
- b. chemically formed ; Gypsum, Quartz
- c. Organic formed ; Limestone, Coal

Sedimentary rocks are in strata or layer form, usually porous, contain fossils, formed from the pre-existing rocks, non-crystalline in nature, found in the largest surface area of the Earth. Minerals like Coal, Petroleum, Natural gas, Sandstone, Clay, Limestone are found in this rock.

3. . metamorphic rocks : When the Igneous and Sedimentary rocks undergo physical and chemical changes due to the influence of temperature and pressure, it results in the formation of Metamorphic rocks.

The process of Metamorphism is of two types:

a.Contact Metamorphism: Limestone → Marble

b.Regional Metamorphism: Clay → Slate from ,



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The process of Metamorphism is of two types:

a.Contact Metamorphism: Limestone → Marble

b.Regional Metamorphism: Clay → Slate from Influence of heat and pressure on the original rock (Igneous or Sedimentary) forms Metamorphic rock.

▶ eg. Granite → Gneiss,

▶ Basalt → Schist,

▶ Sandstone → Quartzite,

▶ Limestone → Marble, Coal → Graphite → Diamond etc.,

▶ Metamorphic rocks are compact, hard and do not contain fossils. A few precious minerals and gem stones like Diamond, Gold ore, Marble, Quartzite, Ruby, Emerald, Sapphire etc., are found in this rock.

▶ Uses of Rocks:

▶ 1)Rocks supply various minerals.

▶ 2)Rocks are used for constructional activities.

▶ 3)Rocks are used to make statues, idols and other art and sculpture.

Identification of rocks:The geographer should have necessary knowledge of rocks and minerals which make up the physical landscape of the earth surface. Most communally using method of identifying of rocks through rock samples in hand specimen means **megascopic examination** by using of **magnifying hand lens**. an other method is using **petrological microscope**.