TENDER HEART HIGH SCHOOL

Sector 33 B, Chandigarh

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SUBJECT: Geography

CLASS: IX

Chapter 6 (continue)

(3) Metamorphic Rocks

→ These Rocks are formed because of Alteration of Igneous and Sedimentary Rocks due to very high temperature and pressure.

→ In this original rocks change in such a way that they loose their colour, texture, hardness and mineral composition.

→ The process by which Metamorphic Rocks are formed is known as Metamorphism.

Causes of Metamorphism

→ It takes place over long period of Time.

→ Metamorphism may be caused due to Volcanic Activity, Movement in Earth's Crust and sometimes when a Rock lies deep within the Crust.

→ It takes place during mountain building process and totally changes the texture and nature of the Original Rocks Completely and also makes the rock harder and more resistant.

Features of Metamorphism

→ These rocks are more compact and harder than the Original Rocks.

→ These rocks can form from Igneous, Sedimentary or Metamorphic Rocks also.

→ They don't contain any fossil.

→ These rocks are impermeable in Nature.

→ These rocks can also have crystalline form.

→ Metamorphism creates the formation of new minerals.

TYPES OF METAMORPHISM

DYNAMIC METAMORPHISM | THERMAL METAMORPHISM | CONTACT METAMORPHISM | REGIONAL METAMORPHISM

(A) REGIONAL METAMORPHISM:

In this type of metamorphism, the rocks get buried inside the earth and may undergo changes due to the effect of high pressure and high temperature.

(B) CONTACT METAMORPHISM:

In this type of metamorphism, the rocks undergoes change when they come in contact with hot lava. Moreover, in this metamorphism, the minerals in the rocks and new minerals adds up to form new rocks. eg: Marble is formed from limestone.

(C) THERMAL METAMORPHISM:

In this type of metamorphism, rocks undergoes chemical change due to exposition to high temperature.
eg: Shale changes to slate.
Coal changes to Graphite.

(D) Dynamic Metamorphism:

In this type of metamorphism, the rocks undergoes changes due to exposition to high pressure.

Examples of Metamorphic Rocks:

(i) Igneous to Metamorphic:

(a) Schist:

It is the altered form of Basalt.

(b) Gneiss:

It is the altered form of Granite.

(c) Amphibolite:

It is the altered form of Basalt or Gabbro.

(d) Eclogite:

It is the altered form of Basalt or Gabbro.

(b) Sedimentary to Metamorphic:

(a) Quartzite:

It is altered form of sandstone.

(b) Marble:

It is altered form of Limestone.

(c) Slate:

It is altered form of clay or Shale.

(d) Graphite:

It is altered form of Coal.

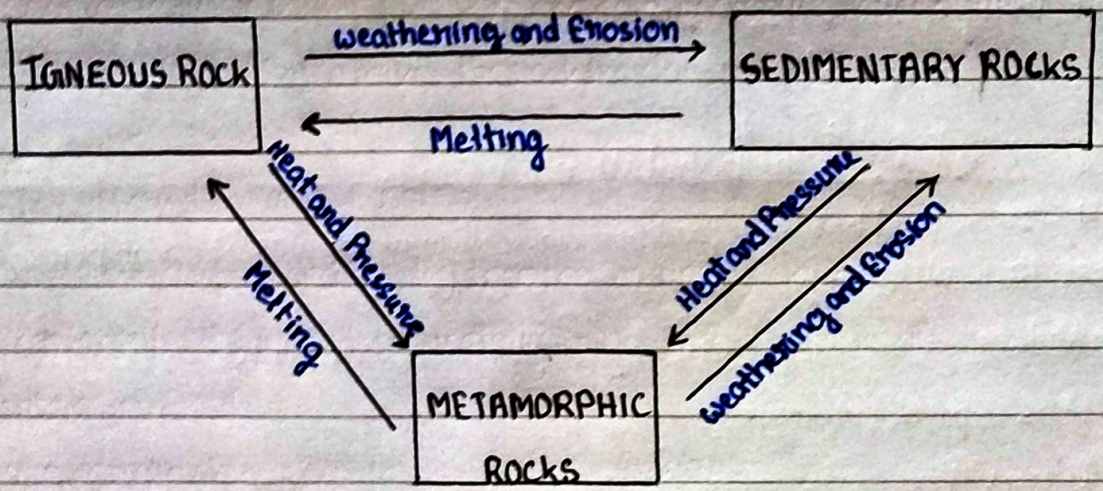
Uses of Metamorphic Rocks

→ Metamorphic Rocks like marble, Slate and quartizite are used as building materials. Moreover, these rocks are also used as artwork and to make Statues.

→ Metamorphic Rock such as diamond is used to cut Glass and Talc is used to make powder, paints, Lubricants etc.

→ Metamorphic Rock such as Garnet is used to make Gemstone and Asbestos is used as insulation and fireproofing.

Rock CYCLE



→ The Parent Material of all the rocks are Igneous Rocks. When these rocks come out of the surface of the earth, they are eroded and their material turns into sediments.

→ when this sediments deposits in layers, they take form of Sedimentary Rocks.

→ These sedimentary Rocks are again buried into the Earth due to forces of Earth.
→ If these sedimentary Rocks goes very deep inside the Earth, they melt, change into lava and again come out as Igneous Rocks.
→ If these sediments don't go too deep, they may change into metamorphic rocks.
→ Thus, this cyclic process of changing the form of Rocks is called Rock Cycle.