Rocks Formation Cycle

Rock Cycle

The rock cycle involves the formation, alteration by weathering and then formation of rock again. All the process occurs simultaneously.

Weathering of Rocks

Weathering of rocks takes long time. After weathering, rocks are converted into soil.

1. Strong desert winds

Fig: Strong dessert winds

2. Flowing water

Fig: Flowing water

3. Ocean tides

Fig: Ocean Tides

4. Glaciers

Fig: Glaciers

Mineral

A mineral is composed of an element or a chemical combination of elements. For example, Silica is a mineral made up of oxygen, silicon and a small amount of other elements.

Fig: Silica (a mineral)

Gemstone is a naturally occurring beautiful and attractive mineral which has immense demand in jewellery making. These minerals are cut and polished for making the jewellery.

Fig: Gemstone

Recycling of Minerals

Useful minerals are not in huge quantity. They are available in limited quantity hence they are recycled from scrap.
Metals can be recycled again and again from scrap without degradation of its properties.

Uses of Mineral

Metallic Minerals

- Shiny surfaces-do not let light pass through- good conductors of heat and electricity. Can be pounded pressed and stretched without breaking.
- Examples- gold, silver, copper
- Uses- aircrafts and automobiles

Nonmetallic Minerals

- Shiny or dull surface- may let light pass through good- insulators of electricity
- Examples- silica, gypsum
- Uses- concrete, building materials, computer chips

Gemstones

- Some nonmetallic minerals are highly valued for beauty and/or rarity over usefulness
- Examples- diamonds, topez, ruby
- Uses- jewelry

Difference between mineral and Rock

Mineral	Rock
Pure in state	Contain more than 1 mineral
Look attractive	Not attractive
Have definite shape	No definite shape
Same color through cut	Different colors, as contains different minerals of different color
Have single crystal	Not single crystal

Coal (A sedimentary Rock)

Coal is an organic rock, which is formed from the dead plants. It is not a proper rock, as rocks are inorganic. Coal, oil and natural gas are formed from the dead remains of living thing and hence called fossil fuels. Chemical energy of coal → burning → heat + light energy

Fig: Coal

Petroleum

Petroleum is formed when plants and animals in the sea died millions of years ago and formed a layer of sediments one after another. Petroleum trapped solar energy in the form of chemical energy which when burns produces heat and light energy. Petrol, diesel, kerosene, LPG, etc. all are petroleum product used as a fuel.

Fig: Petroleum

Conservation of Coal and Petroleum

These non-renewable sources of energy would exhaust very soon if not conserved. Petroleum will last for only 40 - 50 years and coal would last for about 250 years.

Fossil fuels burn and release CO_2 in the atmosphere which causes global warming hence, they should be less consumed.

Minerals containing metals are called ores. Metals are obtained from minerals using metallurgical process. Gold, Iron, Aluminum, Copper etc. are obtained from different ores.

Commonly Used Questions:

The lithosphere of the earth consists of which one of the following types of matter?
(a) Soil and rocks
(b) Rocks only
(c) Basalt only
(d) All of these
(e) None of these
Answer: (a)

Expiations
The lithosphere of the earth is consist of soil and rocks.
Therefore, option (a) is correct and rest of the options is incorrect.

Which one of the following is a factor of weathering of rocks?
(a) Strong wind
(b) Plowing water
(c) Glaciers
(d) All of these
(e) None of these
Answer: (d)

Explanation
Strong wind, flowing water and glaciers all are the factors of weathering of rocks.
Therefore, option (d) is correct and rest of the options is incorrect.

Remember:

1. Rocks may be crushed and folded to form features such as mountain ranges.
2. About 3/4th of all the gold produced in the world each year comes from South Africa.
3. Diamond is the hardest substance in nature. It is used in industry for cutting.
4. One drop of water is made of millions of water molecules.
5. Coal and diamond are made up of the same element, i.e. carbon.