

NAME: Varun Salhotra

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Weathering

→ It is the process of disintegration and decomposition of rocks where they exist. It consequently leads to formation of soil.

Types of weathering

(i) Mechanical Weathering:

→ It is responsible for disintegration of rocks by the elements of weather such as heat, frost, wind etc.

It depends upon following factors:

(i) Extreme of temperature:

When rocks are exposed to high temperature in daytime and low temperature at night, they disintegrate and split into many parts.

(ii) Nature of Rock

Mechanical weathering takes place in the soft or soluble rocks more easily than in hard and insoluble rock.

(iii) Structure of rocks

It also affects weathering as vertically arranged rocks are more prone to weathering than horizontally arranged rocks. This is because air, water, snow and frost can easily enter vertically arranged rocks.

(iv) Frost:

When water enters the gap of rocks, it freezes and due to this the volume of ice increases that leads to disintegration.

(v) Wind

The fast blowing wind hits the soft rocks and easily erodes them, this also leads to disintegration of rocks.

(vi) Slope of land:

The steep slope erodes faster and leads to weathering than gentle slope.

(b) Chemical Weathering:

- It involves the breaking down of rocks by altering or dissolving the rock minerals due to chemical action or changes.
- It is slow as compared to mechanical weathering.
- It is common in hot and humid regions.

Processes of Chemical Weathering

(i) Oxidation:

When oxygen in air and water reacts with minerals in rocks, oxidation takes place.
eg: rocks that contain iron, changes into iron oxide after coming in contact with air and water.

(ii) Hydration:

In this process, there is chemical reaction of water with minerals present in rocks and changes the proportion and composition of rocks and minerals.
eg: feldspar changes into kaolin after absorbing water.

(iii) Carbonation:

Carbonation is the process in which atmospheric carbon dioxide leads to solution weathering. This process occurs on rocks that contains limestone and chalk.

(iv) Solution:

When rocks disintegrate after coming in contact with water, this process is known as solution.