CLOUDS

Cloud is a mass of minute water droplets or tiny crystals of ice formed by the condensation of the water vapour in free air at considerable elevations. As the clouds are formed at some height over the surface of the earth, they take various shapes.

According to their height, expanse, density, and transparency or opaqueness clouds are grouped under four types: (i) cirrus; (ii) cumulus; (iii) stratus; (iv) nimbus

- **Cirrus**
    - Cirrus clouds are formed at high altitudes (8,000 – 12,000m).
    - Cirrus clouds are the **highest** of all clouds and are composed entirely of **ice crystals.**
    - Cirrus clouds are **precipitating clouds**, although the ice crystals evaporate high above the earth's surface.
    - They are thin and detached clouds having a feathery appearance. They are always white in colour.
- **Cumulus**
    - They are generally formed at a height of 4,000 -7,000 m.
    - Cumulus clouds look like cotton wool.
    - They exist in patches and can be seen scattered here and there and have a flat base.
    - They are Often called "fair-weather" clouds.
    - cumulus clouds are common over land on sunny days, when the sun heats the land creating thermal convection currents.Each thermal is distinct, and, consequently, each cumulus cloud is a distinct puff
- **Stratus**
    - Stratus clouds are the lowest forming and are often called fog or mists when they are earth-bound.
    - As their name implies, these are layered clouds covering large portions of the sky.
    - These clouds are generally formed either due to loss of heat or the mixing of air masses with different temperatures.Stratus clouds are formed when a large air mass cools at the same time.
- **Nimbus**
    - Nimbus clouds are black or dark gray.
    - They form at middle levels or very near to the surface of the earth.
    - These are extremely dense and opaque to the rays of the sun.
    - Nimbus clouds are shapeless masses of thick vapour.
    - Most of our names for clouds come from Latin and are usually a combination of the following prefixes and suffixes:
- **Stratus/strato** = flat/layered and smooth
- **Cumulus/cumulo** = heaped up/puffy, like cauliflower
- **Cirrus/cirro** = High up/wispy
- **Alto** = Medium level

- **Nimbus/Nimbo** = Rain-bearing cloud

We can combine these names and can build up an idea of any cloud's character. For example, if we combine nimbus and stratus we get 'nimbostratus' – a cloud which is flat and layered and has the potential for rain.

- A combination of these four basic types can give rise to the following types of clouds:
- High clouds – cirrus, cirrostratus, cirrocumulus;
- Middle clouds – altostratus and altocumulus;
- Low clouds – stratocumulus and nimbostratus;
- clouds with extensive vertical development – cumulus and cumulonimbus

Answer the following questions based on these Study Notes.

Q1. The instrument used for measuring relative humidity in air is

Answer: –Hygrometer

Q2. A sudden fall in the barometric reading indicates

Answer: –Storm

Q3. Hail storm occurs in summer season due to the formation of clouds called

Answer: – Cumulonimbus

Q4. Which cloud is known a high cloud?

Answer: – Cirrus

Q5. The type of clouds which is the thunder cloud and associated with heavy rain is

Answer: – Cumulonimbus

Q6. Arrange the following types of clouds in the increasing order of their heights: 1. Cumulus 2. Stratus 3. Cirrus 4. Nimbus

Answer: – 4, 2,1,3