mention the full qs statement or the source of the qs for proper evaluation....

without that, these are just notes and cannot be awarded marks.....

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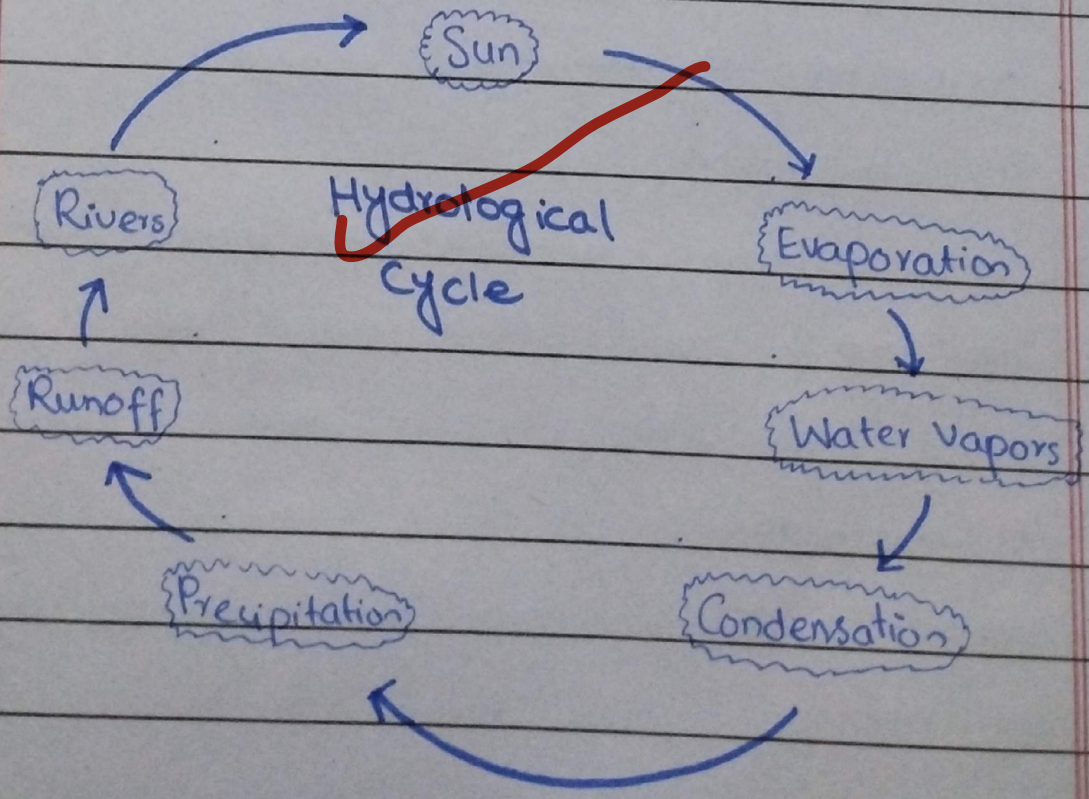
Hydrological Cycle (Water Cycle)

Introduction

The hydrological cycle is the continuous movement of water between the Earth's surface, atmosphere, and subsurface layers. It is a natural, dynamic system driven by solar energy and gravity, ensuring the constant circulation and availability of water on Earth. This cycle plays a fundamental role in sustaining life, regulating climate, and maintaing ecological balance.

Flowchart of Hydrological Cycle



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Main Process of Hydrological Cycle

1- Evaporation

Evaporation is the process by which water from oceans, rivers, lakes and soil changes into water vapor due to solar heat. Oceans are the primary source, contributing the majority of atmospheric moisture.

2- Transpiration (Evapotranspiration)

Plants absorb water from the soil and release it into atmosphere through leaves. This process, combined with evaporation, is known as evapotranspiration and significantly contributes to atmospheric humidity.

3- Sublimation

In cold regions, ice and snow directly convert into water vapor without passing through the liquid phase. This process is called sublimation.

4- Condensation

Water vapor rises, cools, and condenses into tiny droplets forming clouds. This process requires cooling of air and the presence

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of condensation nuclei such as dust particles.

5- Precipitation

When water droplets in clouds become heavy, they fall to the Earth as precipitation in the form of rain, snow, hail, or sleet. It is the main mechanism by which water returns to the Earth's surface

6- Infiltration and Percolation

Some precipitation infiltrates into the soil and moves downward through the layers of soil and rock, forming groundwater reservoirs known as aquifers.

7- Runoff

Water that does not infiltrate flows over the surface into rivers, lakes, and oceans. This surface flow is known as runoff.

8- Groundwater Flow

Groundwater moves slowly beneath the Earth's surface and may reemerge through springs or discharge into rivers and oceans.

9- Storage

Water is stored in various reservoirs such

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as oceans, glaciers, lakes, rivers, soil moisture, and the atmosphere. Oceans hold the largest share of Earth's water

Importance of Hydrological Cycle

- Maintains global water balance
- Regulates climate and weather patterns
- Supports ecosystems and biodiversity
- Recharges groundwater resources
- Essential for agriculture and human survival.

Human Impact on Hydrological Cycle

Human activities have significantly affected the natural water cycle:

- Deforestation reduces transpiration
- Urbanization increases runoff and decreases infiltration.
- Climate change alters rainfall patterns.
- Pollution degrades water quality.

Conclusion: The hydrological cycle is a vital natural system that ensures the continuous circulation of water on Earth. It plays a crucial role in maintaining ecological balance, supporting life and regulating climate.

good structure and arguments.....