

**ID number: 14398**

**Subject: Water Demand Supply and Distribution**

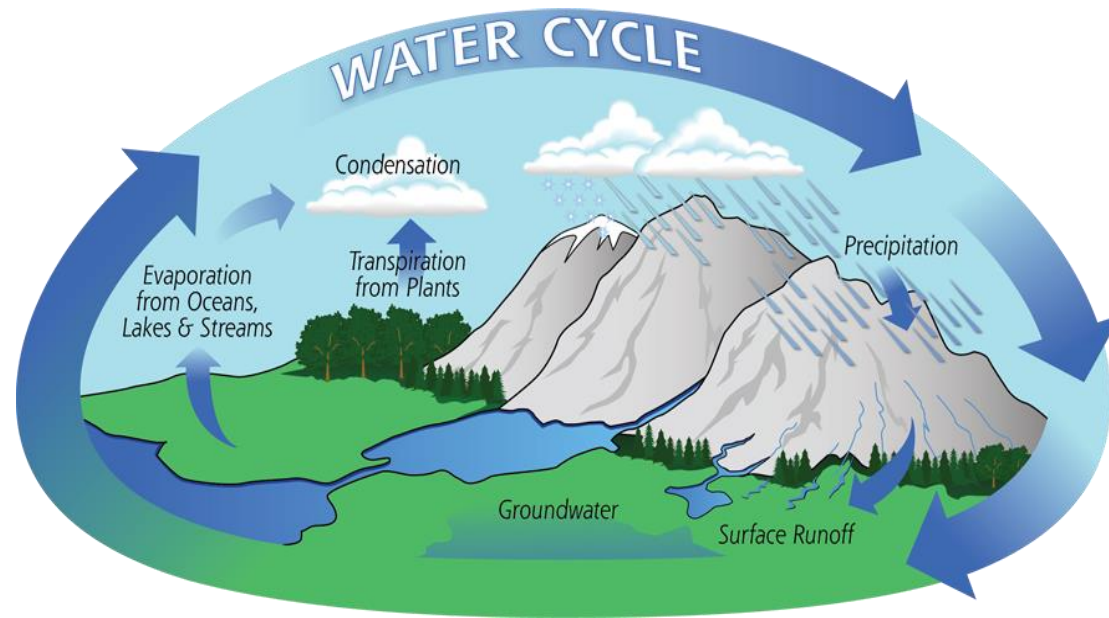
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**Semester: M.S (Civil Engineering)**

**Q1.** What is “**Hydrological Cycle**”? Now-a-days there is general discussion that Hydrological Cycle has been disturbed. Is this a myth or reality? Briefly explain.

The **water cycle** describes how **water** evaporates from the surface of the earth, rises into the atmosphere, cools and condenses into rain or snow in clouds, and falls again to the surface as precipitation.

The water cycle, also known as the hydrologic cycle or the hydrological cycle, describes the continuous movement of water on, above and below the surface of the Earth.



The above diagram clearly explains the water cycle.

**I agree to the fact that water cycle has been disturbed. It is disturbed due to many reasons.**

Rain forests store vast quantities of water, and when those trees are cut down, the water they store is lost. As trees and plants are responsible for extracting groundwater from the soil and returning it the atmosphere, deforestation results in the water not being able to be released back into the atmosphere, affecting the balance of the water cycle. This results in lush rainforests turning into barren deserts leading to dry climates, which affects livings conditions.

**Q2.** Briefly describe “**Ground water Sustainability**”? How can “**Rainwater Harvesting**” be linked to ground water sustainability?

**Groundwater sustainability** is the development and use of **groundwater** resources to meet current and future beneficial uses without causing unacceptable environmental or socioeconomic consequences.

**Rain water harvesting** is a technique of collection and storage **of rainwater** into natural reservoirs or tanks, or the infiltration of surface **water** into subsurface aquifers (before it is lost as surface runoff). One method **of rainwater harvesting** is rooftop **harvesting**.

**Rain water harvesting** can be linked to ground water sustainability. Excessive use of ground water reduces the water table of ground water. Most of the agriculture based countries whose economy is based only on agriculture depends on water. Combine use of ground water and harvested rain water could be a solution to reduce depending on ground water.

**Q3.** What “**Quality Parameters**” should be considered in designing water supply system for a community?

While Selecting a water source for development, the engineer must consider three primary factors:

**1. Water quantity**

**2. Water reliability**

### **3. Water quality**