

Question:1

Define the following

1. Hydrological cycle
2. Surface water
3. Groundwater
4. Water table
5. Aquifer
6. Humus
7. Drip irrigation

Solution:

1. Hydrological cycle: The continuous movement of water in nature is called the water cycle or hydrological cycle.
2. Surface water: Surface water is the water located on the surface of the earth.
3. Groundwater: The water found in soil, sand and rocks beneath the surface of the earth is called groundwater.
4. Water table: The top level of the water under which the ground is saturated with water is called the water table.
5. Aquifer: The seepage and collection of rainwater in the soil, sand and rocks under the ground is called underground water or aquifer.
6. Humus: The decomposition of the plant matter by the microorganisms present in the soil is called humus.
7. Drip Irrigation: Drip irrigation is an efficient water conserving method of irrigating the fields which involves watering the roots of the plants at a slow rate drop by drop.

Question:2

Water in the industrial sector is used as

- (a) a raw material
- (b) a solvent
- (c) a coolant
- (d) all of them

Solution:

- (d) All of them

In the industrial sector, water is used as a raw material, a solvent and also as a coolant.

Question:3

Water conditions in India are present at

- (a) North Eastern States
- (b) Tamil Nadu
- (c) Himachal Pradesh
- (d) Thar desert

Solution:

- (d) Thar Desert

Thar Desert is a place in India having waterless conditions.

Question:4

Which one of these is responsible for the depletion of the water table in India?

- (a) Deforestation
- (b) Increasing population
- (c) Agricultural activities
- (d) All of these

Solution:

- (d) All of these

Deforestation, increasing population and agricultural activities are three among the many factors that contribute to the depletion of water table in India.

Question:5

Which one of the following can be used for the conservation of water?

- (a) Rainwater harvesting
- (b) Deforestation
- (c) Agricultural activities
- (d) Increasing population

Solution:

- (a) Rain water harvesting

Rain water harvesting is a method used for the conservation of water.

Question:6

Water lost during floods can be conserved by building

- (a) dams
- (b) reservoirs
- (c) embankments
- (d) all of these

Solution:

- (d) All of these

Dams, reservoirs and embankments can be built to conserve water lost during floods.

Question:7

Name the different forms in which water exists in three different states on Earth.

Solution:

Water exists in three reversible states namely

1. Solid
2. Liquid
3. Gas

Question:8

How do people in cities and rural areas get water for domestic purposes?

Solution:

The water used for household purposes such as drinking, cooking, washing clothes and watering plants is called domestic water. In cities, water is distributed to homes by the municipal water distribution system. The water treatment plants deliver treated water into the homes suitable for drinking. In rural areas, domestic water is obtained mostly from underground sources such as a motor driven tube well.

Question:9

Differentiate between precipitation and condensation?

Solution:

Condensation	Precipitation
Condensation is a process in which water transforms its state from water vapour to liquid water.	Precipitation is the next stage of condensation where the tiny droplets of liquid water combine to form larger droplets and fall on the surface of the earth.

In the nature, clouds are formed in the sky as water vapour condenses to tiny droplets of water.	The tiny droplets of water formed out of condensation, collide with each other to form heavy larger droplets and fall on the surface of the earth as snow or rain.
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Question:10

What is water table? How is a spring formed?

Solution:

The seepage and collection of rainwater in the soil, sand and rocks under the ground is called underground water. Water table is the top level of this underground water. When this water table meets the land surface, water ejects out of the surface forming a natural spring which eventually flows into the lakes, streams and oceans.

Question:11

What are the causes of water scarcity in India?

Solution:

Water is essential for life and though it is a natural renewable resource, it is being depleted at a faster rate causing scarcity of water. Some of the major factors contributing to scarcity of water in India are:

- a. Pollution of fresh water resources due to the discharge of toxins from the factories into the water bodies
- b. Uncontrolled use of bore well technology in removing ground water by the farmers
- c. No effective measures being initiated to build fresh water ecosystems and very little is being done to recharge ground water.

Question:12

What is the effect of water scarcity on plants?

Solution:

Water is very essential for the growth of the plant without which the plants would have reduced photosynthetic activity resulting in poor harvests. If the plants do not get adequate water, they will not reach the expected height, might get infected with diseases and eventually die. If the plants die, there will be no food and no oxygen, thus ceasing all kinds of life on earth.

Question:13

What are dams? How are dams responsible for the availability of water for the entire year for a particular region?

Solution:

Dams are massive artificial walls built across rivers to regulate and retain water. Water is collected behind the walls in a reservoir. Dams include gates which can be opened or closed to channelize the water to the downstream regions. During dry seasons, when the river turns dry, these dams let out the collected water and regulate the water flow in the rivers and make water available evenly throughout the year.

Question:14

Fill in the blanks with the correct words.

1. All the three states of water are (reversible/irreversible).
2. Water freezes to ice at (100/0)° C.
3. The continuous circulation of water in natural is called the (hydrogen/hydrological) cycle.
4. (Dams/Wells) are built on rivers to regulate water flow and distribute water more evenly.
5. Water levels in rivers increase greatly during (winter/monsoon).

Solution:

1. All the three states of water are reversible.
2. Water freezes to ice at 0°C.
3. The continuous circulation of water in natural is called the hydrological cycle.
4. Dams are built on rivers to regulate water flow and distribute water more evenly.
5. Water levels in rivers increase greatly during monsoon.

Question:15

State three major categories where water is used by us? Which category involves the maximum usage of water in India and why?

Solution:

Water is majorly used by us for agricultural, domestic and industrial purposes.

1. India is an agricultural country, therefore a major portion of the water is used in agriculture. At least 90% of the total water is used for irrigation purposes due to unpredictable monsoons and scanty rainfall.

2. In industries too, the demand for water has increased substantially over the years as water is used as a raw material, a coolant, a solvent, a transporting agent and also in producing electricity.
3. Water is used at homes for various domestic purposes such as drinking, cooking, cleaning, washing clothes and utensils and watering the plants.

Question:16

Describe the categories of the various source of water.

Solution:

Sources of water can be mostly classified into two types which are:

- a. Surface water: Water found on the earth's surface is called surface water. This is sub classified into three types based on the purity of water. They are:
 - Rain water: This is the purest form of water. Rain or snow which showers on the surface of the earth as a result of precipitation provides fresh water to our planet.
 - River and lake water: The source of water in these water bodies is either from the rainfall or from the melting of snow on mountains.
 - Sea and ocean water: Oceans and seas are huge water bodies which have millions of litres of water in it.

(b) Underground water or subsoil water: The seepage and collection of rainwater in the soil, sand and rocks under the ground is called underground water which can be brought to the surface in the form of springs or by drilling in wells.

Question:17

What are the various factors contributing to the depletion of the water table?

Solution:

The major factors contributing to the depletion of the water table are:

- a. Increasing population: With a growing demand for houses, shops, roads etc, the numbers of the constructions works also have gone up. This results in the depletion of water table as usage of underground water is more when compared to the seepage.
- b. Increasing Industries: Industries also use water at almost all levels of production putting a heavy load on fresh water ecosystems.
- c. Agricultural activities: As India is an agricultural country, a huge portion of water is used in this sector for irrigation purposes. Plenty of ground water is used due to unpredictable monsoons. This cause depletion of the water table.
- d. Deforestation: Deforestation also causes the water table to get depleted as ground water

does not get recharged when the trees which have the potential to retain water are decreased in number.

Question:18

Why is there a need to conserve water? Describe the methods that can be adopted to conserve water.

Solution:

Water is essential for life without which we simply perish. Though it is a natural renewable resource, it is being depleted at a faster rate than it can be renewed. Therefore, conservation of water is very important in order to avoid water crisis. To conserve water, we all should adopt water saving practises such as:

- a. Fixing the leaking and dripping taps at households.
- b. Recycling the water at homes.
- c. Building dams and reservoirs to regulate and retain water.
- d. Employing the method of drip irrigation in fields which helps in saving huge amounts of water and also doubles the harvest.
- e. Rainwater harvesting systems which capture and store rainwater directly.