Water - A Natural Resource

Solution 1.a:

About 71% of the Earth's surface is covered with water but most of it is in seas and oceans. Seawater is salty and forms about 97% of the total water. It cannot be used for drinking and agriculture. Of the remaining 3% of water, 2.7% is groundwater or in the form of ice and therefore cannot be used. Hence, though water is the largest resource, so little of it can be used for drinking and agriculture.

Solution 1.b:

The underground reserves of water formed by the flowing water of the rivers, streams and rivulets which seep into the ground constitute groundwater.

Solution 1.c:

Water is found on the Earth in three forms – solid, liquid and gaseous.

1. On the mountain tops and polar regions, water is found in the form of ice (solid).
2. In wells, lakes, rivers, seas and underground, water is in the liquid form.
3. In air, water is found in the form of vapour (gaseous).

Solution 1.d:

Salt is obtained from seawater in salt pans by the process of evaporation. Water from the seas is trapped in the salt pans during high tides. Because of the Sun's heat, the water evaporates and is lost in the form of water vapour leaving the salt in the salt pans. The salt gets precipitated out from the salty water of the seas. In this way, salt is obtained from seawater in salt pans.

Solution 2:

1. To prevent the evaporation of water from lakes **cetyl alcohol** is sprayed on the surface of the water.
2. An increase in temperature causes **faster/rapid** evaporation.
3. The proportion of dissolved **oxygen** in polluted water is low.

Solution 3:

Group 'A'	Group 'B'
(a) World Water Day	2. 22 March
(b) Rainwater harvesting	5. Groundwater level
(c) Potable water	4. Chlorination
(d) Irrigation	1. Canals

Solution 4.a:

The flowing water in rivulets, streams and rivers seeps into the ground. Also, rainwater falling on the Earth's surface percolates into the ground. Therefore, water sources are formed under the surface of the Earth.

Solution 4.b:

Groundwater levels are falling because of continuous use of water. We use groundwater for various purposes. This water is obtained by digging wells and tube-wells. Such continuous use makes the groundwater levels to fall.

Solution 4.c:

If we dig near river banks, we find the water level quickly because the level of groundwater is quite high in these areas.

Solution 4.d:

Wet clothes become dry after some time because the water from wet clothes evaporates because of atmospheric heat. It exists as water vapour and enters the air.

Solution 4.e:

Water changes its state depending on the temperature. In polar regions, the temperature is quite low as much as 0°C. At this temperature, water changes from the liquid state to the solid state. Therefore, at polar regions, water is found in the solid form.

Solution 5:

The Government has made strict laws for preventing the pollution of water. They are as follows:

1. It is compulsory to treat wastewater properly before it is released from the factories.
2. Wastewater from toilets and latrines is not allowed to discharge into the flowing water bodies.
3. The toxic and organic substances present in the wastewater from toilets should be broken down before it is released into water bodies.
4. Trench latrines, septic tanks and soak pits are built to drain away waste from toilets and latrines wherever possible.
5. Wastewater from factories and industries are properly treated before it is released into the flowing water bodies.

Solution 6.a:

Potable water

1. The water which is fit for drinking is called potable water.
2. The water which we obtain from different sources may be contaminated because of microorganisms, floating particles and several salts dissolved in it.
3. This water is treated in water treatment plants where filtering machines remove the impurities and destroy the germs.
4. Finally, chlorine is added to the water to make it fit for drinking and other uses. This process is called chlorination.
5. The Government spends a lot of money on processes such as storage, filtration and chlorination of water and supply of clean potable water.
6. Therefore, though there is plenty of water on the Earth's surface, potable water is less, and so, it is costly.

Solution 6.b:

Water management

1. Water management is the method of solving the water crisis by adopting the following measures:
2. Taking care of water on a personal level.
3. Using water sparingly.
4. Reusing water after suitable treatment rather than wasting it.
5. Reopening old wells which have become blocked.
6. Management of water requires replenishing sources of water.

7. Water management is an essential process as only 3% water on the Earth's surface is available for drinking and other purposes.
8. Water is a valuable resource, and so, it has to be used with great care.

Solution 6.c:

Rainwater harvesting

Rainwater harvesting is a method of collecting and storing rainwater to be used later in times of shortage. It can be done in the following two ways:

1. Water which falls on the roofs of buildings is carried down through pipes and then stored in large tanks or pits in the ground. As rainwater is clean, it can be stored and used later without any treatment.
2. Water in the drains along the sides of the roads is allowed to seep into the ground which raises the level of groundwater. In this way, water reserves are replenished.