Revision Notes

Class- 7 Social Science (Geography)

Chapter 5 - Water

Water Cycle is defined as the procedure of continuous change of the different physical states of water and circulation within the water bodies, atmosphere, and land. Water gets evaporated by the sun's heat to form water vapour.

The water vapour rises up and forms clouds. Eventually, condensation occurs, and water comes down to the Earth in the form of rain, snow, or sleet.

CBSE Class 7 Social Science (Geography) Chapter 5 centres on the water cycle and different natural phenomena related to it.

A Brief Overview:

The earth may be termed a terrarium. The water that we see today is no different from the water that existed several hundred years ago. It is surprising to see the water utilized to irrigate a field in Punjab may have flowed down the Nile River a hundred years ago.

The key resources of freshwater are glaciers, rivers, springs, and ponds. Seas and oceans are huge reservoirs of salt water, while ponds and lakes are mainly freshwater bodies. The reason behind the existence of salty water in the oceans is that they contain huge amounts of dissolved salts, mainly sodium chloride.

Distribution of Water Reservoirs:

● Three-fourth of the earth's surface is water and the rest is land.

● There are various reasons behind the fact that several countries are facing a dearth of water in spite of the existence of more water than land on this earth.

● It is important to note that all the three-fourth portion of water on this earth is not available to us. ●The allocation of water is given in the following in percentage form;

● Ocean - 97.3%

● Ice-caps – 02.0%

● Groundwater – 0.68%

● FreshWater Lakes – 0.009%

● Inland seas and salt lakes – 0.009%

● Atmosphere – 0.0019%

● Rivers – 0.0001%

● From the above distribution, it can be concluded that only the oceans are made up of saline water, and ice-caps, groundwater, freshwater lakes, inland seas, and salt lakes, atmosphere, and rivers are made of freshwater. Water is one of the most quintessential things required by us for survival. Our thirst is quenched when we are thirsty by water only. Wasting of such a valuable resource is one of the major offences conducted by us in the present day.

Ocean Circulation:

● The circulation or the movement of the water in the ocean in various ways is termed as ocean circulation.

● The water of the oceans is not calm like that of ponds or lakes or other such water bodies. It is always in a state of movement. It circulates in various directions, following different patterns under different forces. These movements are categorized as waves, currents, and tides.

● Waves are almost always seen in an ocean as the water rises and falls on the surface.

● Tides take place twice a day. While one is high tide, the other is low tide. The former increases the volume of water, and during the latter, water is drawn away from the shore.

● Current refers to the movement of water as influenced by external factors like wind and its direction of flow, breaking of waves, a difference of temperature, etc.

Waves:

● The continuous process of rising of water from the surface of the ocean and falling down alternatively is depicted by the term wave.

● Huge waves are created by the blowing of winds at extremely high speed at the time of a storm. Those huge waves can be the reason behind tremendous devastation.

● A great quantity of ocean water can be shifted because of an earthquake, a volcanic eruption, or underwater landslides. Because of these, a stupendous tidal wave is formed, which is termed as tsunami.

● A tsunami is a Japanese word that identifies the occurrence of 'Harbour waves.' Generally, the harbours get devastated by tsunamis.

● Sometimes the height of the waves becomes almost 15 m during the time of the tsunami. Till now, the largest height of a tsunami wave has been recorded as 150m.

● The waves of tsunami move at a velocity of more than 700km per hour. The coastal areas of India were largely damaged during the tsunami in the year 2004. The Indira Point of Andaman and Nicobar Islands completely disappeared as a result of a tsunami in India in the year 2004.

Effects of 2004's Tsunami:

● Indian Ocean's tsunami on the 26th of December 2004. Few of the islands of the Indian Ocean were entirely washed away.

● There was submerging of Indira Point in the Andaman and Nicobar Islands, which was the southernmost point of India.

● The waves entered into the depth of 3km from the coast resulting in the death of more than 10,000 people.

● More than one lakh houses were affected by the deadly tsunami.

● The major affected areas of India were Andhra Pradesh, Tamil Nadu, Kerala, Pondicherry, and the Andaman and Nicobar Islands.

● The tsunami of 2004 is termed as the most deadly tsunami since the last several hundred years.

Indications of Tsunami:

● The tsunami that happened in 2004 was the result of the lack of proper monitoring, advance warning systems, and proper information among the coast dwellers of the Indian Ocean.

● Speedy removal of water from coastal regions is the primary indication of a tsunami.

● It is gradually followed by destructive waves.

● Astonishingly, the people gathered at the coast to observe the tsunami instead of going to high ground at the time of the tsunami. At the time of hitting of the enormous waves, the large casualty of curious onlookers was witnessed.

Tides:

● A tide is defined as the rhythmic rise and fall of ocean water twice a day. When the water rises to its maximum level, much of the shore gets covered by it. It is then called high tide.

● Low tide happens at the time of falling of water to its lowest level and moving away from the shore.

● Tides are formed by the firm gravitational pull yielded by the sun and the moon on the exterior part of the earth. The impact of the gravitational force of the moon pulls the water of the earth nearer to the moon, the results of which are the high tides.

● The tides are at their highest point at the time of the full moon and new moon days. On these particular days, the sun, the moon, and the earth come in a single line. These particular tides are termed as spring tides.

● On the other hand, the ocean water gets drawn in a diagonal direction opposite to the gravitational pull of the sun and moon at the time when the moon is in its first and last quarter.

● The above phenomenon causes low tides. These tides are termed as neap tides. The navigation can be done with the help of high tides.

Ocean currents:

● The streams of water flowing continuously on the exterior part of the ocean in a particular direction are called ocean currents.

● Generally, there are two types of ocean currents: warm ocean current and cold ocean current.

Warm Ocean Currents:

● The warm ocean currents originate closer to the equator and travel towards the poles.

● As they move, they influence the temperature of the surrounding region.

● Example: The Gulf Stream, Humboldt Current of Lima, Peru, etc.

Cold Ocean Currents:

● The water from the polar or higher latitudes is carried by the cold currents to the tropical or lower latitudes.

● They bring in a huge quantity of planktons along with them which are very crucial for the survival of creatures in the marine ecosystem. Example: Labrador Ocean Current, East Iceland Current, Cape Horn Current, etc.

● Sea streams moreover play a critical part in the dispersal of life shapes. Case: European eel.

Important questions and answers.

1. How do the high tides help in navigation?

Ans: ● Navigation in the deep sea is widely helped by the high tides. The water level is raised near the shores by the high tides. This assists the ships to reach the harbour in an easier way.

● The practice of fishing is also facilitated by the high tides. Various kinds of fish arrive near the seashore at the time of high tides. Due to this, the fishermen are able to catch a number of fishes with less effort closer to the seashore. The

electricity is also generated by the rise and fall of water due to tides in many places.

2. What are the effects of ocean currents?

Ans: ● The temperature conditions of a particular area are largely affected by ocean currents. The warm temperature is brought by the warm ocean currents at the land surface. The cold ocean current results in cold weather. The leading angling grounds of the world for the anglers are created at the assembly point of the warm sea current and the cold sea current.

● Examples of such areas are the seas around Japan and the coastal area of Northern America. But it is very difficult for navigation at the meeting point of the warm ocean current and the cold ocean current as it creates foggy weather.

3. What is precipitation?

Ans: ● The water discharged from clouds in the form of rain, freezing rain, sleet, snow, or hail is termed as precipitation. It is the basic link in the water cycle that performs the delivery of atmospheric water to the earth. The maximum portion of precipitation falls down as rain.

● The water vapour and cloud droplets (tiny drops of condensed water) are what the clouds floating overhead are composed of. Precipitation is created by the small droplets condensed on even smaller dust, salt, or smoke components, which performs as a nucleus. Then collisions happen to generate a droplet with a fall speed that exceeds the cloud updraft speed, and this eventually falls down as precipitation.

4. Write a short note on the tsunami in India in 2004.

Ans: ● A tsunami hit the Indian Ocean on 26th December 2004. There was an earthquake that resulted in huge waves, and the epicentre of the earthquake was near the western boundary of Sumatra.

● The measure of the earthquake was 9.0 on the Richter scale. There was an abrupt movement of the seafloor because of the fact that the Burma plate went over the Indian plate. As a result, the earthquake took place.

● The earthquake moved the ocean floor about 10-20m and tilted that in a downward direction. The displacement caused a huge quantity of ocean water to flow to load the gap. The deadliest tsunami of the century took place in the above-mentioned way.

5. Explain the distribution of water in a behavioural way.

Ans:

● Grab 3 litres of water. Imagine this quantity of water as the total water on the surface of the earth. Quantify 12 spoons of water from the container and keep the water in another bowl. The water that is left behind in the container signifies the salty water identified in oceans and seas.

● It is obvious that the water is not in shape for consumption. It is termed as saline water as it contains salt. The total quantity of freshwater on earth is represented by the 12 spoons of water that were kept in the bowl. The above experiment can easily identify the actual amount of freshwater distributed on the earth's surface.