

Water Resources

3

Very Short Answer Type Questions _____ (1 mark each)

Q. 1. How has Shillong solved the problem of acute shortage of water?

OR

How has Tamil Nadu solved the problem of acute shortage of water?

[CBSE OD, Set 1, 2019]

Ans. Shillong has been able to deal with the problem of acute shortage of water by setting up Bamboo drip irrigation systems

and Roof top rain water harvesting. This helped Shillong meet its total water requirement of each household.

OR

Tamil Nadu has been able to deal with the problem of acute shortage of water by adopting rooftop water harvesting techniques. This practice was made mandatory under the law for all houses across the state.

Short Answer Type Questions-II _____ (3 marks each)

Q. 1. "The dams that were constructed to control floods have triggered floods." Analyse the statement.

[CBSE OD, Set 1, 2019]

Ans. Our first Prime Minister, Mr. Jawaharlal Nehru, called the dams "the temple of modern India". These dams, that have been constructed to support the economic development of the country, can be destructive at times.

They may cause floods because sometimes, they are constructed without proper planning and sometimes low standard construction material is used. This inferior quality of construction material increases the chances of floods. Construction of these dams can make the area, in which they are constructed, 'earthquake prone', which may lead to landslides and the water to flow out of dams. The sudden release of water from dams can also cause flood and devastation.

Q. 2. Analyse the merits of Multipurpose projects.

[CBSE OD, Set 2, 2019]

Ans. Merits of multipurpose projects are given below:

- (i) Dams are built for generating hydroelectricity.
- (ii) Canals are made for irrigation purpose.
- (iii) Canals can also be used for inland navigation.

(iv) Water supply can be used for domestic and industrial purpose.

Q. 3. "Water scarcity may be an outcome of large and growing population in India." Analyse the statement.

[CBSE Delhi, Set 1, 2019]

Ans. A large population requires more water not only for domestic use but also to produce more food. Hence, to facilitate higher food grain production, water resources are being over exploited to expand irrigated areas for dry season agriculture. Irrigated agriculture is the largest consumer of water. Post independent India witnessed intensive industrialisation and urbanisation, creating vast opportunities for us. Today, large industrial houses are as common place as the industrial units of many MNCs. The ever-increasing number of industries have made matters worse by exerting pressure on existing freshwater resources. Industries, apart from being heavy users of water, also require power to run them. Much of this energy comes from hydroelectric power. Most of these have their own groundwater pumping devices to meet their water needs, which results in fragile water resources being over exploited. This has caused falling ground-water levels in several of these cities.

Q. 4. Analyse the importance of 'rainwater harvesting.' **[CBSE Delhi, Set 2, 2019]**

Ans. It is a technique of increasing the recharge of groundwater by collecting and storing rainwater by constructing structures, such as dug wells, percolation pits and check dams.

- (i) In most cases, the harvested water is usually redirected to storage tanks, cistern or reservoirs. First and foremost, the collection offers a better and efficient utilization of energy resource. It is important because potable water is usually not renewable.
- (ii) Harvesting allows the collection of large amounts of rainwater. Rainwater is usually free from harmful chemicals, which makes it ideal for irrigation purposes.
- (iii) Another important advantage is that it reduces demand for potable water. It is important especially in areas with low water levels.

Rainwater harvesting, thus, is considered as a very reliable way to conserve water.

Q. 5. Analyse the impact of 'water scarcity.'
[CBSE Delhi, Set 3, 2019]

Ans. Water is one of the most important requirement for agriculture and livestock. Water is needed for irrigating

the crops; thus, water scarcity immediately leads to loss of crops. The scarcity of water damages the already sown crops. Livestock is affected as the fodder (animal feed) production is also decreased manifolds due to water scarcity. The domestic farms need water for its proper maintenance. So, water scarcity is a threat to both these sectors. Water scarcity directly affects human beings and animals. Absence of potable water for drinking and other purposes causes a lot of diseases and problems to human beings. This hinders their daily routines and they are unable to discharge their daily duties.

Without access to clean water, there is no way one can avail proper sanitation facilities. Access to quality water is fundamental to better living standard and economic growth. Absence of that lowers the living standards of the country. Natural landscapes suffers the most because of water scarcity as it contributes to desertification, loss of plants and death of wildlife.

Q. 6. How has the ever increasing number of industries in India made worse position by exerting pressure on existing fresh water resources? Explain. [CBSE, 2018]



Topper's Answers

	Introduction : Industrialisation exerted a pressure on existing freshwater resources by sufficiently exploiting them.
(a)	Nearly <u>22%</u> of existing freshwater resources are used by industries in various stages of production without ever been recycled or reused. <u>Aquifers</u> and <u>river water</u> exploited.
(b)	The used water is released onto various streams without properly treating. <u>Chemicals</u> , <u>radioactive materials</u> , <u>lead</u> , and <u>mercury</u> , etc pollute river water. Nearly <u>one litre</u> of wastewater pollutes <u>8 times</u> fresh water.

(c) The hot water from various thermal power plants and industries are released without cooling, thus affecting aquatic life, depriving it of oxygen. This depletes the amount of freshwater that can be used.

Conclusion : Thus, industries need to adopt sustainable water resource management in order to save them.

Ans. (i) India has witnessed intensive industrialisation and urbanisation for the last few years. The ever increasing number of industries has made matter worse by exerting pressure on existing fresh water resources. Fresh water is required in thermal energy plants and steel industries on a large scale.

(ii) Industries, apart from being heavy users of water also require power to run it which in turn needs additional water.

(iii) We have to consider a situation where water is sufficiently available but these areas still suffer from water scarcity. This scarcity may be due to bad quality of water or polluted water.

Q. 7. "Irrigation has changed the cropping pattern of many regions in India." Analyse the statement. [CBSE OD, Set 3, 2019]

Ans. A well developed irrigation facility reduces the dependence of farmers on monsoons and ensures regular supply of water. Irrigation facilities also ensure installation of tube wells, pumps in the farm lands that enable the farmer to irrigate large portions of land more effectively. They also facilitate the construction of dams that help in generating electricity. Better irrigation has contributed in the increased production of maize in states like Karnataka, Uttar Pradesh, Bihar, Andhra Pradesh and multicropping has also become possible due to irrigation. Water intensive cropping is now done in places like Ganganagar and Hanumangarh region of Rajasthan where

the Indira Gandhi canal has facilitated easier and better irrigation.

Q. 8. Why is the rooftop rainwater harvesting the most common practice in Shillong inspite of the fact that Cherrapunjee and Mawsynram receiving highest rainfall in the world are situated only at a distance of 55 kms from there? Explain.

[CBSE, Term 1, 2016]

Ans. The roof top rainwater harvesting is the most common practice in Shillong inspite of the fact that Cherrapunjee and Mawsynram receiving the highest rainfall in the world are situated only at a distance of 55 kms from there. Insipite of being very close to the area of highest rainfall in the world, Shillong faces acute shortage of water. Nearly every household in the city has a rooftop rainwater harvesting structure. Nearly 15-25% of the total water requirement of the household comes from rooftop water harvesting.

Q. 9. Explain any three causes of water scarcity. [CBSE, Term 1, 2015]

Ans. Shortage of water is called the scarcity of water. It is due to the less rainfall or occurs in the drought prone area.

Causes of water scarcity are:

- (i) India is the second largest populated country in the world and for more population, we need more water to produce crops or other domestic use.
- (ii) Excessive use of water in the industries for producing more hydro electricity.
- (iii) Over exploitation of water in urban areas leads to the water scarcity in India.



Long Answer Type Questions _____ (5 marks each)

Q. 1. What is the need for conservation of water resources? Suggest three measures to conserve water resources.

[CBSE, Term 1, 2015]

Ans. Water is the basic need of the people. It is a natural resource needed by every living being on the globe. It is limited and necessary to conserve it. Reasons to conserve water can be explained as follows:

- (i) Water resources in India are limited and our population is increasing day by day so the water requirement is also increasing day by day.
- (ii) Availability of water in our country is uneven, so it is necessary to make it available to all.

(iii) Water resources are being polluted day by day, especially in the urban areas and are not suitable for drinking purpose.

(iv) It is necessary to conserve water to make it available to all for the continuation of our livelihood and to save our ecosystem as well as human beings.

Measures to Conserve Water Resources:

- (i) Save water, avoid water wastage in domestic as well as at all other levels.
- (ii) Recharge ground water by using rain water harvesting etc.
- (iii) Use drip irrigation and sprinklers methods to irrigate the fields.