



#### Question-8

Here is a false statement. Identify the mistakes and rewrite them correctly.

In Gujarat, the Sabarmati basin farmers were agitated when higher priority was given to water supply in urban areas, particularly during droughts.

Solution:

In Gujarat, the Sabarmati basin farmers were not agitated when higher priority was given to water supply in urban areas, particularly during droughts.

#### Question-9

Here is a false statement. Identify the mistakes and rewrite them correctly.

Today in Rajasthan, the practice of rooftop rainwater water harvesting has gained popularity despite high water availability due to the Rajasthan Canal.

Solution:

Today in Rajasthan, the practice of rooftop rainwater water harvesting has gained popularity despite low water availability due to the Rajasthan Canal.

#### Question-10

Explain how water becomes a renewable resource.

Solution:

Three-fourth of the earth's surface is covered with water, but only a small proportion of it accounts for freshwater that can be put to use. This freshwater is mainly obtained from surface run off and ground water that is continually being renewed and recharged through the hydrological cycle. All water moves within the hydrological cycle ensuring that water is a renewable resource.

#### Question-11

What is water scarcity and what are its main causes?

Solution:

Water scarcity is the shortage of water but it is not only associated with regions having low rainfall or those that are drought prone. The availability of water resources varies over space and time, mainly due to the variations in seasonal and annual precipitation, but water scarcity in most cases is caused by over- exploitation, excessive use and unequal access to water among different social groups.

#### Question-12

Compare the advantages and disadvantages of multi-purpose river projects.

Solution:

Regulating and damming of rivers affect their natural flow causing poor sediment flow and excessive sedimentation at the bottom of the reservoir, resulting in rockier streambeds and poorer habitats for the rivers' aquatic life. Dams also fragment rivers making it difficult for aquatic fauna to migrate, especially for spawning. It has great ecological consequences like salinisation of the soil. At the same time, it has transformed the social landscape i.e. increasing the social gap between the richer landowners and the landless poor.

The dams that were constructed to control floods have triggered floods due to sedimentation in the reservoir. Moreover, the big dams have mostly been unsuccessful in controlling floods at the time of excessive rainfall.

It was also observed that the multi-purpose projects induced earthquakes, caused waterborne diseases and pests and pollution resulting from excessive use of water.

#### Question-13

Discuss how rainwater harvesting in semi-arid regions of Rajasthan is carried out.

Solution:

In the semi-arid and arid regions of Rajasthan, particularly in Bikaner, Phalodi and Barmer, almost all the houses traditionally had underground tanks or tankas for storing drinking water. The tanks could be as large as a big room. The tankas were part of the well-developed rooftop rainwater harvesting system and were built inside the main house or the courtyard. They were connected to the sloping roofs of the houses through a pipe. Rain falling on the rooftops would travel down the pipe and was stored in these underground 'tankas'. The first spell of rain was usually not collected, as this would clean the roofs and the pipes. The rainwater from the subsequent showers was then collected.

The rainwater can be stored in the tankas till the next rainfall making it an extremely reliable source of drinking water when all other sources are dried up, particularly in the summers. Rainwater, or palar pani, as commonly referred to in these parts, is considered the purest form of natural water. Many houses constructed underground rooms adjoining the 'tanka' to beat the summer heat as it would keep the room cool.

#### Question-14

Describe how modern adaptations of traditional rainwater harvesting methods are being carried out to conserve and store water.

Solution:

Fortunately, in many parts of rural and urban India, rooftop rainwater harvesting is being successfully adapted to store and conserve water. In Gendathur, a remote backward village in Mysore, Karnataka, villagers have installed, in their household's rooftop, rainwater-harvesting system to meet their water needs. Nearly 200 households have installed this system and the village has earned the rare distinction of being rich in rainwater. Rainwater harvesting is once again being conserved through modern adaptation. Rainwater running down from the roofs is not fed into drains. Instead it is piped into underground reservoirs.

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