

Water Resources

Practice Questions

Q. 1. In which state is Hirakud dam located?

Answer: Hirakud dam is constructed across the Mahanadi River, which is about 15 kilometre from Sambalpur in the state of Orissa in India. It is the multipurpose project in the Mahanadi basin which integrates conservation of water with the flood.

Q. 2. On which river is Mettur dam constructed?

Answer: The Mettur dam is one of the largest dams in India situated in Salem district in Tamil Nadu. The dam was constructed across the Cauvery River in 1934.

Q. 3. Which state had made it compulsory to build rooftop rainwater harvesting structure?

Answer: Tamil Nadu is the first state in India which had made compulsory to build rooftop rainwater harvesting structure to all the houses across the state. The government has taken the initiative to punish the individuals who are defaulting.

Q. 4. Is water scarcity always associated with regions of low rainfall or those that are drought-prone? Comment on the statements.

Answer: Water scarcity may be an outcome of a large and growing population and resulting in greater demands for water, and unequal access to it. A large population means 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 and dry-season agriculture. After independence, India has witnessed the major intensive urbanization and industrialization, for creating major employment opportunities. The ever-increasing number of industries has 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.

The water scarcity is not only the problem of low rainfall areas it is also a problem of the heavy rainfall areas. Chirapunji is the place which is famous for the highest rainfall in the country is 55km away from Meghalaya even then the area faces the water scarcity. This scarcity is because of the lack of a storage facility. When the fresh water storage facility is not available in the area then the area faces the water scarcity even then the area has the highest rainfall. But in low rainfall areas, there will be less water scarcity this is because of the efficient management of the water and rainwater harvesting. Therefore the water not only depends on the rainwater but also efficient management and storage of the water in the specified areas.

Q. 5. Why is different water harvesting systems adopted in ancient India?

Answer: Rainwater harvesting itself means storage of the rainwater for future use. This storage of water can be used for a variety of purposes. Even the process of recharging of the groundwater is done by the rainwater harvesting, but this recharge of groundwater is the natural process. The rainwater harvesting is one of the most efficient ways of utilization of water with least cost and natural process. Rainwater harvest increases the availability of the groundwater, improves the quality of the groundwater and increases the fertility of the soil. It has been practiced by the people over a long period of time and through different methods. Rainwater harvesting is practiced in different forms by the different states in India. They are:

- The rainwater harvesting in Rajasthan is locally known as kund or tanka. This is a process in the underground tank is dug near the house (kund or tanka) and the rainwater is stored in that kund or tanka. This is one of the traditional ways of rainwater harvesting in Rajasthan.
- The backward villages in Mysuru, Karnataka, they have installed rooftop in their house. This installing of the rooftop was for the rainwater harvesting system to meet their water needs.

Q. 6. Write about the rooftop rainwater harvesting system prevalent in Meghalaya. How is the bamboo drip irrigation system employed for water harvesting in Meghalaya?

Answer: Rainwater harvesting is the method to collect and store rainwater for various uses. It is also used to recharge groundwater aquifers. It has been in practice for a long time using different methods. Recharging the groundwater through ponds, lakes and canals and building harvesting plants in homes are some of them. Rainwater harvesting is the water conservation programme to save the rainwater. This is mainly used to manage the water scarcity in the area. The rooftop rainwater harvesting was commonly practiced in Rajasthan to manage the water scarcity.

The rooftop rainwater harvesting is the most common practice in Shillong, Meghalaya. Chirapunji is the place which is famous for the highest rainfall in the country is 55km away from Meghalaya even then the area faces the water scarcity. This scarcity is because of the lack of a storage facility. When the fresh water storage facility is not available in the area then the area faces the water scarcity even then the area has the highest rainfall. Therefore most of the households in the state has been involved in the rainwater harvesting programme. Nearly 15-20% of the water usage for the family comes from rainwater harvesting.

The 200-year-old system of the drip irrigation using bamboos, in this bamboo is used as pipes to stream and spring water. These bamboos carry about 18-20litres of water and transported to several meters, finally it ends up with 20-80 drops of water to the site of

the plantation. For the effective flow of water the bamboo is placed from the hill tops to the lower elevated regions, therefore the water flows with continuity.

Q. 7. Explain the various problems associated with the construction of large dams. Give examples in support of your answer.

Answer: Dam is built as the barrier to the flowing of water. It is constructed as the reservoir and it mostly improves the irrigation facility of the area. According to the height, dams can be categorized as large dams and major dams or on the other hand as low dams, medium height dams and high dams.

Various problems associated with the constructed of large dams:

- Wipes out all flora and fauna

When the flow of water is stopped by building dams then mostly the aquatic lives will be affected. The living things in the river will be completely spoilt.

- Increases the chances of flood

When the whole water is stored in one place, then the water will over flow and if the dam's capacity is meagre then there are also chances for cracking and breaking down of dams.

- Chances for interstate disputes

The river flows from state to state and when these rivers are blocked by preventing the entry to another state with dams. Then there are high chances of getting disputes between states. This issue is prevalent in India in case of the states Tamil Nadu and Karnataka for the river Cauvery.

- Chances of triggering an earthquake

There are places which have been experienced the earthquake, flood and other natural calamities because of the construction of dams.

Q. 8. Why should we conserve water resources? What values do we reflect by conserving water resources?

Answer: Water scarcity is possible to pose the greatest challenge on account of its increased demand coupled with shrinking supplies due to overutilization and pollution. Water is a cyclic resource with plentiful supplies on the globe. Approximately, 71 per cent of the earth's surface is covered with it but fresh water constitutes only about 3 per cent of the total water.

There is the only a small portion of water which can be used for drinking for the whole world, even though the planet is blue; a very small share of fresh water is effectively available for human use. The ease of use of fresh water varies over space and time. The tensions and disputes on sharing and control of this scarce resource are becoming contested issues among communities, regions, and states. The evaluation, efficient use and conservation of water, therefore, increase into necessary to guarantee development.

The values which are reflected by conserving water are:

- Conserving of water will lead towards sustainable development. Therefore the water which is scarce will be available to use for future generation.
- Prevention from natural calamities such as draught, therefore it is essential for the environment to sustain.
- The water conservation helps to restructure the water cycle process and increases the underground water level.

Q. 9. On the given political outline map of India, locate and label the following items.

A. Salal Project

B. Tungabhadra Dam

C. Rana Pratap Sagar Dam

D. Hirakund Dam

E. Tehri Dam

F. Bhakra Nangal Dam

G. Sardar Sarovar Dam

H. Nagarjuna Sagar Dam

Answer:

INDIA

(Political Outline)

