

**Q1 Multiple choice questions.**

**(i) Based on the information given below classify each of the situations as 'suffering from water scarcity' or 'not suffering from water scarcity'.**

- (a) Region with high annual rainfall.**
- (b) Region having high annual rainfall and large population.**
- (c) Region having high annual rainfall but water is highly polluted.**
- (d) Region having low rainfall and low population.**

**Answer.**

- (a) Not suffering from water scarcity**
- (b) Suffering from water scarcity**
- (c) Suffering from water scarcity**
- (d) Not suffering from water scarcity**

**(ii) Which one of the following statements is not an argument in favour of multipurpose river projects?**

- (a) Multi-purpose projects bring water to those areas which suffer from water scarcity.**
- (b) Multi-purpose projects by regulating water flow helps to control floods.**
- (c) Multi-purpose projects lead to large scale displacements and loss of livelihood.**
- (d) Multi-purpose projects generate electricity for our industries and our homes.**

**Answer.**

- (c) Multi-purpose projects lead to large scale displacements and loss of livelihood.**

**(iii) Here are some false statements. Identify the mistakes and rewrite them correctly.**

**(a) Multiplying urban centers with large and dense populations and urban lifestyles have helped in proper utilisation of water resources.**

**Answer.** Multiplying urban centers with large and dense populations and urban lifestyles have caused the over exploitation of water resources.

**(b) Regulating and damming of rivers does not affect the river's natural flow and its sediment flow.**

**Answer.** Regulating and damming of rivers affect their natural flow and causes the sediment to settle at the bottom of the reservoir.

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

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

**(d) Today in Rajasthan, the practice of rooftop rainwater water harvesting has gained popularity despite high water availability due to the Indira Gandhi Canal.**

**Answer.** Today in Rajasthan, the practice of rooftop rainwater harvesting is on the decline due to the Rajasthan canal.

**Q2 Answer the following questions in about 30 words.**

**(i) Explain how water becomes a renewable resource.**

**Answer.** All water that is used primarily ends up in the sea. From there, it enters the hydrological cycle in the form of water vapour. Freshwater is renewed by this cycle when precipitation occurs. Hence, water is a renewable resource.

**(ii) What is water scarcity and what are its main causes?**

**Answer.** Water scarcity or water stress occurs when water availability is not enough to match the demand for water. It is caused by an increase in population, growing demand for water, and unequal access to it.

**(iii) Compare the advantages and disadvantages of multi-purpose river projects.**

**Answer.**

**Advantages :-** Multipurpose river projects help in irrigation, electricity production, flood control, inland navigation and fish breeding.

**Disadvantages :-** The reservoirs destroy local flora and fauna. Many native villages are submerged, and people lose their livelihood, with little or no hope of rehabilitation.

**Q3 Answer the following questions in about 120 words.**

**(i) Discuss how rainwater harvesting in semi-arid regions of Rajasthan is carried out.**

**Answer.** Almost all the houses in the semi arid regions of Rajasthan have traditionally underground constructed tanks or tankas for storing drinking water. They are as large as a big room and are a part of the well-developed rooftop rainwater harvesting system. These tanks are constructed inside the main house or the courtyard, and are connected to the sloping roofs of the houses through a pipe. The rain falling on the rooftop travels down and is stored in the tanks. The first spell of rain is not collected as this water cleans the roof and the pipes. The rainwater from the subsequent spells is 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. The tanks also help in cooling the houses as rooms built around them have generally low temperatures due to conduction

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

**Answer.** Traditional methods of rainwater harvesting like 'the rooftop method' are becoming popular in India. In Gendathur village, Mysore, about 200 households have adopted the rooftop rainwater harvesting method, thereby making the village rich in rainwater. The state of Tamil Nadu has made it compulsory for all the houses to have rooftop rainwater harvesting structures. Defaulters are severely punished.

**The modern rainwater harvesting is done as;**

- a. Rooftop rain water is collected using a PVC pipe.
- b. It is filtered using sand and bricks.
- c. It is filtered using sand and bricks.
- d. Underground pipe takes this water to sump for immediate usage.
- e. Excess water from the sumps is taken to the well.
- f. Water from the well recharges the underground.
- g. Later this water is taken out from the well during summer or dry season.

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