INDIAN SCHOOL AL WADI AL KABIR

Class: X	Department: SOCIAL SCIENCE	Subject: Geography
Chapter 3 Question Bank :6	Topic: Water Resources	Year :2025-26

	Important Terms:
	Perennial Canals:- Canals developed by diverting water from rivers that flow throughout the year. **Drip Irrigation:-** A type of irrigation were water gets dropped in the form of drops near the roots of the plant mainly to conserve the moisture. **Inundation Canal:-** Canal meant for diverting flood waters mainly during the rainy season. **Rainwater harvesting:-** It is a technique developed to store the rainwater, river water or groundwater by capturing and storing rainwater, by constructing structures such as percolating pits, check dams etc. to meet the needs of the population.
Q 1	**How is fresh water obtained?** **Ans.** The fresh water is obtained from precipitation, surface run off and ground water that is continually being renewed and recharged through the hydrological cycle.
Q 2	**What is water scarcity? Mention the reasons responsible for water scarcity.** **OR** **Water is available in abundance in India. Even then scarcity of water is experienced in major parts of the country. Explain it with examples.** **Ans.** Water scarcity is shortage of water wherein adequate quantity of water is not available to meet its requirements in different uses. **Factors/Causes/Reasons responsible –** **A) Quantitative aspects of water scarcity:** **I.** The availability of water resources varies over space and time, mainly due to the variations in seasonal and annual precipitation. **II.** Over-exploitation, excessive use and unequal access to water among different social groups. **III.** Water scarcity may be an outcome of large and growing population and consequent greater demands for water. A large population means more water 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. Most farmers have their own wells and tube-wells in their farms for irrigation to increase their production. But it may lead to falling groundwater levels, adversely affecting water availability and food security of the people. Thus, in spite of abundant water there is water scarcity. **IV.** Multiplying urban centers with large and dense populations and urban life styles have not only added to water and energy requirements, but have further aggravated the problem. **V.** Intensive industrialization and urbanization witnessed in post-independence India have significantly contributed to the exploitation of available freshwater resources. Industries require huge supply of water for production, cooling of machineries and for power supply in form of hydroelectricity.

	B) Qualitative aspects/causes: - These are mainly related to water pollution and bad quality of water. Much of the water may be polluted by domestic and industrial wastes, chemicals, pesticides and fertilizers used in agriculture, thus making it hazardous for human use. Many smaller streams have turned into toxic streams.
Q 3	**"Overpopulation or large and growing population can lead to water scarcity." Explain.** **OR** **Explain the consequences of growing population on water resources in regions having ample water resources.** **Ans.** Many of our cities have ample water resources but are still facing water scarcity. i) More population means more demand for water. ii) A large population means more water not only for domestic use but also to produce more food. iii) To facilitate higher food grain production, water resources are being overexploited to expand the irrigated areas and dry season agriculture. iv) Overutilization of water results in lowering of the groundwater levels.
Q 4	**How have the growing population, industrialization and urbanization led to water scarcity? Explain.** **Ans.** i) **Growing population:-** Growing population is one of the basic factors which is responsible for the scarcity of water. Most of our cities are facing this problem due to overpopulation. A large population means more water not only for domestic use but also to produce more food. ii) **Commercialization of agriculture :-** After the success of green revolution, our farmers are producing commercial crops. The commercial crops need more water and other inputs. Assured means of irrigation like tube wells and wells are responsible for the falling groundwater levels. iii) **Industrialization :-** The post independent India witnessed intensive industrialization and urbanization. Today, large industrial houses are common in the form of industrial units of many MNCs. The ever increasing number of industries has made matters worse by exerting pressure on the existing freshwater resources. iv) **Urbanization :-** Urbanization has also aggravated the problem of water scarcity. Most of our cities are over-populated. Overpopulation leads to over utilization of the water resources, and also pollutes the existing resources.
Q 5	**What is the need of the hour in relation to conserve water resources?** **Ans.** a) To manage our water resources. b) To safeguard ourselves from health hazards. c) To ensure food security, continuation of our livelihoods d) To prevent degradation of our natural ecosystem.
Q 6	**What is the main objective of the Atal Bhujal Yojana (Atal Jal), and in how many states of India is it being implemented?** **Ans.** The main objective of the Atal Bhujal Yojana (Atal Jal) is to promote behavioural changes in communities by shifting their attitude from water consumption to conservation and smart water management. The scheme is being implemented in **seven states**—Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, and Uttar Pradesh.

Q 7	**What is the main goal of the Jal Jeevan Mission (JJM) launched by the Government of India?** **Ans.** The main goal of the Jal Jeevan Mission (JJM) is to ensure that every rural household receives a regular and assured supply of potable piped water at a service level of 55 litres per person per day on a long-term basis, thereby improving the quality of life and ease of living in rural areas.
Q 8	**How was the water conserved in ancient India? Give some examples in support of your answer.** **Ans.** The water was conserved in ancient India by constructing sophisticated hydraulic structures like dams built of stone rubble, reservoirs or lakes, embankments and canals for irrigation. **Some of the hydraulic structures in ancient India were:** I. In the first century B.C., Sringaverapura near Allahabad, had sophisticated water harvesting system channeling the flood water of the river Ganga. II. During the reign of Chandragupta Maurya, dams, lakes and irrigation systems were extensively built. III. Irrigation works have been found in many places viz., Kalinga (Orissa), Nagarjunakonda (Andhra Pradesh), Bennur (Karnataka) and Kolhapur (Maharashtra). IV. In the 11th century, Bhopal Lake was built. It was one of the largest artificial lakes of its time. V. In the 14th century, the tank in Hauz Khas, Delhi was constructed by Iltutmish. It supplied water to Siri Fort area.
Q 9	**What is a dam? How are the dams classified?** **Ans.** A **dam** is a barrier across flowing water that obstructs, directs or retards the flow, often creating a reservoir, lake or impoundment. "Dam" refers to the reservoir rather than the structure. **Dams are classified according to:** a) **structure and materials used:** They are classified as timber dams, embankment dams or masonry dams. b) **According to the height,** dams can be categorized as large dams and major dams or alternatively as low dams, medium height dams and high dams.
Q 10	**Why are dams referred to as multi-purpose river valley projects?** **OR What are the advantages/objectives of multipurpose river valley projects? Briefly explain these giving two examples of multi-purpose projects.** **Ans.** Dams are referred to as multipurpose river valley projects where the many uses of the impounded water are integrated with one another. **advantages/objectives of multipurpose river valley projects:** Multipurpose river valley projects are meant to tackle various problems associated with river valleys in an integrated manner. Following are the objectives of multi-purpose river valley projects: a. Flood control b. Water supply for domestic and industrial uses c. Generate electricity d. Provide inland navigation e. Encourage tourism and recreation f. Conservation of water g. Irrigation

	h. fish breeding (pisciculture) **examples of multi-purpose projects** a) In Sutlej-Beas River basin, the Bhakra- Nangal project water is being used both for hydel power production and irrigation. b) Similarly, Hirakud project in the Mahanadi basin integrates conservation of water with flood control.
Q 11	**Who proclaimed dams as the 'temples of modern India' and why?** **Ans**. Jawaharlal Nehru proclaimed the dams as the 'temples of modern India' as it would integrate development of agriculture and the village economy with rapid industrialization and the growth of urban economy. Reasons: a) They reduce flooding. b) Provide water for agriculture. c) Provide water for domestic and industrial consumption. d) Provide hydroelectricity for houses and industries.
Q 12	**Cite reasons why multipurpose projects and large dams have come under great scrutiny and opposition.** **OR** **Give examples to describe how multi-purpose projects have faced objections as they failed to achieve the objectives for which they were built.** **Ans.** a) Regulating and damming of rivers affect their natural flow causing poor sediment flow and excessive sedimentation at the bottom of the reservoir. b) This results in rockier stream beds and poorer habitats for the rivers aquatic life. c) Dams also fragment rivers making it difficult for aquatic fauna to migrate especially for spawning. d) The reservoirs that are created on the floodplains also submerge the existing vegetation and soil leading to its decomposition over a period of time. e) Irrigation has also changed the cropping pattern of many regions with farmers shifting to water intensive and commercial crops. This has great ecological consequences like salinisation of the soil. f) Also responsible for inter-state water disputes. For example: - Krishna-Godavari dispute is due to the objections raised by Karnataka and Andhra Pradesh governments. g) The dams that were constructed to control floods have triggered floods in the reservoir. The big dams have mostly been unsuccessful in controlling floods at time of excessive rainfall. h) The floods have not only devastated life and property but also caused extensive soil erosion. i) Sedimentation also meant that the flood plains were deprived of the silt, a natural fertilizer, further adding to the problem of land degradation. j) These projects also induced earthquakes, water-borne diseases, and pests and pollution resulting from excessive use of water.
Q 13	**What are the main benefits of the Sardar Sarovar Project, and which areas does it cover?** **Ans.** The Sardar Sarovar Project, built over the Narmada River in Gujarat, is one of India's largest water resource projects covering four states—Maharashtra, Madhya Pradesh, Gujarat, and Rajasthan. It provides irrigation facilities to 18.45 lakh hectares of land across 3112 villages in 15 districts of Gujarat, 2,46,000 hectares in Rajasthan's desert districts of Barmer and Jalore, and 37,500 hectares in the tribal hilly areas of Maharashtra. The project aims to supply water to drought-prone and desert regions, making these areas drought-proof.
Q 14	**What is Pradhan Mantri Krishi Sinchaee Yojana? What does it focus on?** **Ans. Pradhan Mantri Krishi Sinchaee Yojana:** Some of the broad objectives of this programme are: -

	a) To enhance the physical access of water on the farm and expand cultivable area under assured irrigation (har khet ko pani). b) Improve on-farm water use efficiency to reduce wastage. c) Also, to increase availability of water, both in duration and extent. d) Irrigation and other water saving technologies (per drop more crop) and introduce sustainable water conservation practices, etc.
Q 15	**With regard to which issue are the inter-state water disputes becoming common?** **Ans.** With regard to the sharing the costs and benefits of the multi-purpose project. The Krishna-Godavari dispute is due to the objections raised by Karnataka and Andhra Pradesh Governments. It is regarding the diversion of more water at Koyna by the Maharashtra government for a multipurpose project. This would reduce downstream flow in their states with adverse consequences for agriculture and industry.
Q 16	**What are 'Khadins' and 'Johads'?** **Ans.** In arid and semi-arid regions, agricultural fields were converted into rain fed storage structures that allowed the water to stand and moisten the soil like the Khadins in Jaisalmer and the Johads in other parts of Rajasthan.
Q 17	**Explain the working of underground tanks as a part of roof top rainwater harvesting system practised in Rajasthan.** **OR** **How were the underground tanks beneficial to the people of Rajasthan? Explain.** **OR** **Describe how rainwater harvesting is carried out in the semi-arid regions of Rajasthan.** a) In semi-arid and arid regions of Rajasthan almost all the houses traditionally had underground tanks for storing drinking water. (Bikaner, Phalodi and Barmer) b) They are extremely reliable source of drinking water when other sources are dried up. This is considered the purest form of natural water. c) The tanks can be as large as big rooms. d) The tanks were part of the well- developed rooftop rainwater harvesting system. e) The tanks were built inside the main house or the courtyard giving cooling effect to the rooms in the summer. f) Those tanks were connected to the sloping roofs of the houses through a pipe. g) Rain falling on these rooftops would travel down the pipe and stored in these underground tanks. h) Usually, first rain water is not collected to clean the rooftop and the pipe.
Q 18	**Describe any three traditional methods of rainwater harvesting adopted in different parts of India.** **OR** **Describe any three different rainwater harvesting systems practiced in India.** **OR** **"Rainwater harvesting system is viable alternative both socially, economically and environmentally". Support the statement with three examples.** **Ans:** a) In hilly and mountainous regions, people build diversion channels like 'guls' or 'kuls' in Western Himalaya for agriculture.

	b) Roof-top rainwater harvesting was commonly practiced to store drinking water particularly in Rajasthan. c) In West Bengal, people develop inundation channels to irrigate their fields. d) In semi-arid regions agricultural fields are converted into rainfed storage structures that allowed the water to stand and moist the soil.
Q 19	**Why is groundwater a highly overused resource?** **Ans :** Groundwater is a highly overused resource because of the following reasons: a) Due to large and growing population and consequent greater demands for water and unequal access to it. b) To facilitate higher food grain production for large population, water resources are being over exploited to expand irrigated areas and dry season agriculture. c) In the housing societies or colonies in the cities, there is an arrangement of own ground water pumping devices to meet water needs.
Q 20	**What is Bamboo Drip Irrigation? Mention any two features of it.** **Ans :** Bamboo Drip Irrigation system is a 200-year-old system of tapping stream and spring water by using bamboo pipe and transporting water from higher to lower regions through gravity. **Features:** a) 18-20 liters of water enters the bamboo pipe system, get transported over hundreds of meters and finally reduces to 20-80 drops per minute at the site of the plant. b) The flow of water into the pipes is controlled by manipulating the pipe positions.
Q 21	**Is it possible that an area or region may have ample water resources but is still facing water scarcity? Explain with the help of relevant examples.** **Ans**. Yes, it is possible that an area or region may have ample water resources but still faces water scarcity. Most of our cities are facing this problem. 1. This scarcity may be due to bad quality of water which makes it unfit for consumption. 2. Rivers have been turned into toxic streams. 3. Water gets polluted by domestic and industrial wastes. 4. The growing population, industrialization, agricultural modernization and urbanization have made matters worse by exerting pressure on existing freshwater resources.
Q22	**Describe how modern adaptations of traditional rainwater harvesting methods are being carried out to conserve and store water.** **Ans.** a. Rooftop rainwater is collected through a pipe into the underground tanks. Rooftop rainwater harvesting is practiced in Shillong and Meghalaya where nearly 15 to 25 percent of actual water requirement is met from rooftop water harvesting. b. In Many parts of rural and urban India, rooftop rainwater harvesting is successfully adopted to conserve and store water. c. In Gendathur, a village in Karnataka and nearly 200 households have installed this system. d. In Meghalaya, Bamboo drip is practiced to transport stream and spring water by using bamboo pipes. e. Several low-cost techniques are now available to recharge groundwater and harvest the rainwater like, construction of proclamation ponds, refilling of dug wells and collection of rainwater and storing it in tanks or underground.