Water resources

Q1. (i) Based on the information given below classify each of the situations as 'Suffering from water scarcity' or 'Not suffering from water scarcity'.

Ans:-

Suffering from water scarcity	Not suffering from water scarcity
(b) Regions having high annual rainfall and large population (c) Regions having having high annual rainfall but water is highly polluted.	(a)Regions with high annual rainfall. (d)Regions having low rainfall and low population.

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

Ans:- Option (C) . Multipurpose projects lead to large scale displacements and loss of livelihood.

(iii) Here are some false statements. Identify the mistakes and Re-write them correctly.

Ans:- (a) Multiplying urban centres with large and dense populations and urban lifestyles have not helped in proper utilization of water resources.

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

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

(d) Today in Rajasthan , the practice of rooftop rain water harvesting is on the decline as plenty of water is available due to perennial Indira Gandhi canal.

Q2. Answer the following questions in about 30 words:

(i) Explain how water becomes a renewable resource.

Ans:- Water is a renewable resource as it is continuously being renewed or formed by the hydrological/water cycle itself, where the three inter connected process of evaporation , condensation and precipitation take place. This process of water cycle is never ending and has thus made, water a renewable resource. Water from the oceans, rivers , ponds Lakes and even fields get evaporated by the heat of the sun. The water vapours undergo condensation and fell down to the earth in the form of rain, ice and hail.

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

Ans:- Water scarcity refers to the situation where there is the insufficient availability of water to the human beings for drinking and for fulfilling their other needs like that of irrigation.

Causes of water scarcity:-

(i) The main cause of water scarcity is the ever-increasing development of industries and factories which has made the matter worse by putting extra pressure on the existing fresh water resources.

(ii) The ever-increasing number of urban areas, cities and towns has further aggravated the problem of water scarcity.

(iii) Ever growing population and consequent greater demands of water leads to the scarcity of water.

(iv) To facilitate higher food grain production, water reserves are being over-exploited which lead to the scarcity of water.

(v) The pollution of water by domestic and industrial wastes, chemicals, pesticides and fertilizers has made the water unfit for human use has thus lead to water scarcity.

(iii) Compare the advantages and disadvantages of multipurpose river projects.

Ans:-

Advantages of Multipurpose River Projects	Disadvantages of Multipurpose River Projects
1. Multipurpose river projects help in irrigation and for the production of electricity called hydro electricity. 2. They are helpful in Flood control and the inland navigation. 3. They generate employment by promoting fish breeding.	1. Multipurpose River Projects destroy wide variety of flora and fauna. 2. Many native villages are submerged and people are rendered homeless. 3. 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.

Ans:- A great part of Rajasthan state is a desert so the availability of water has always been a problem there. Keeping in view this thing, many rulers tried to mitigate this problem by adopting the methods of water harvesting and storage.

Many such hydraulic structures are still found in different parts of Rajasthan. Some such structures are the man-made lakes such as Gadsisar lake in jaisalmer , Pinchaula and Udaysagar lakes in Udaipur and Anasagar lake in Ajmer.

The Jaigarh fort near Jaipur proves the best example of water harvesting and storage. These marvels of hydraulic engineering are still proving very useful to a large number of people of Rajasthan.

Many ‘baolis’ or step-wells have also been built in Rajasthan to meet the demand of water in times of need. A network of these ‘baolis’ and other reservoirs scattered all over Rajasthan have been created for water harvesting from streams during short and scanty rainfall.

Houses in the semi arid regions of Rajasthan have traditionally constructed underground tanks or tankas for storing drinking water. They are big and are a part of the well-developed rooftop rainwater harvesting system. But this roof top harvesting is on the decline as plenty of water is available due to the perennial Indira Gandhi Canal.

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

Ans:- From the very ancient time , people have been trying to find methods for conserving and storing water. The people of Indus valley civilization had dug wells in each and every of their houses. Their construction of Great Public Bath proves the fact that as early as 5000 years ago, the people of Mohan-jo-Daro used to harness and conserve water. Making the best use of the methods adopted by ancient Indians in harvesting water , the present generation is harvesting water in tanks, Dams, reservoirs etc.

In ancient India, along with the sophisticated hydraulic structures, there existed an extraordinary tradition of water-harvesting system. In hills and mountainous regions, people built diversion channels like the 'guls' or 'kuls' of the western Himalayas for agriculture. 'Rooftop rainwater harvesting' was commonly practiced to store drinking water, particularly in Rajasthan. In arid and semi-arid regions 'khadins' were made to conserve water. Also, these areas, have traditionally underground tanks for storing drinking water. The tanks were the part of the well developed rooftop rainwater harvesting system.

Even at present the Rooftop Rainwater harvesting is the most common practice in Shillong, Meghalaya. 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 Mysuru, Karnataka, villagers have installed, in their household's rooftop, rainwater harvesting system to meet their water needs. Rooftop Rainwater Harvesting Structure has been made made compulsory in Tamil Nadu to conserve water and there are legal provisions to punish the defaulters.