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5. "Increasing demand" of water for irrigation is a significant contributor to water stress." Discuss why the demand for water in agriculture has increased over time. Also, discuss how poor management of surface and subsurface resources for meeting increasing water demand in agriculture can present a long-term environmental problem for India. (3×5=15)
6. (a) With the help of a case study, discuss how multi-purpose river valley projects can present both economic benefits and socio-ecological losses. (7)
- (b) Discuss how climate change induced severe floods and droughts could impact surface water resources and their use. Also, discuss what action plans should be taken by various states in India to ensure sustainable water resource management to combat climate change. (8)

(500)

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[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1199

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Unique Paper Code : 2182011201

Name of the Paper : Water and Water Resources

Name of the Course : B.Sc. Hons. Environmental Sciences - Core

Semester : II

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **four** questions. **All** Questions carry equal marks.

1. (a) Fill in the blanks : (1×5=5)

- (i) The hydrological cycle includes the processes of _____, runoff, _____, evaporation, and evapo-transpiration.

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- (ii) Water resources can be classified into different types such as _____, rivers, lakes, and wetlands.
- (iii) Aquifers are underground layers of _____ that can hold and transmit groundwater.
- (iv) The Ramsar Convention, 1971, is related to the conservation and management of _____.
- (v) The demand for water can arise from various sectors such as _____, industrial, and domestic.
- (b) Define and explain the following terms (**any five**) :
(2×5=10)
- (i) Evapo-transpiration
- (ii) Surface water
- (iii) Wetland
- (iv) Dissolved Oxygen
- (v) Desalination
- (vi) Water table

2. Write short notes on the following : (3½×4=15)
- (a) Techniques for groundwater recharge
- (b) Chemical properties of water
- (c) Inorganic pollutants in water
- (d) Watershed management
3. Write explanatory notes on the following (**any three**) :
(3×5=15)
- (a) Threats to marine ecosystems due to commercial use
- (b) Significance of the Indus water treaty
- (c) Hydrological cycle
- (d) Water pollution (control and prevention) Act 1972
4. Differentiate between the following : (3×5=15)
- (a) Biological Oxygen Demand (BOD) vs Chemical Oxygen Demand (COD)
- (b) Surface water resources and Subsurface water resources
- (c) Chemical pollutants and Biological pollutants