

5. (a) The increasing demand for water for municipal use is a significant factor contributing to water stress in Indian cities. Discuss the factors that contribute to the widening gap between water demand and supply in urban areas. Explore strategies and measures to mitigate and bridge this growing gap between demand and supply.

(3+7)

- (b) Examine the emerging threats posed by rapid urbanization and agricultural expansion to wetlands in India. Discuss the necessary steps and measures that can be implemented to ensure the protection and conservation of wetland ecosystems.

(4+4=8)

6. Discuss the detrimental impact of climate change on watershed systems. Highlight the importance of maintaining the integrity of watersheds and drainage basins for the overall health and sustainability of rivers. Additionally, discuss the vital role of rural communities in effective watershed management and their contributions to the conservation of water resources.

(4+4+7=15)

(500)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4078

H

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. at 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) \_\_\_\_\_ is the process by which water bodies, such as lakes or rivers, become enriched with excessive nutrients, leading to excessive growth of algae and other aquatic plants.

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- (ii) \_\_\_\_\_ are the areas of land adjacent to rivers, streams, or other water bodies that serve as transitional zones between terrestrial and aquatic ecosystems.
- (iii) \_\_\_\_\_ is an area of land where all the water, such as rainfall or snowmelt, drains into a common outlet, such as a river, lake, or ocean.
- (iv) \_\_\_\_\_ describes a water body that has low nutrient concentrations, typically resulting in low productivity but high water clarity and oxygen levels.
- (v) \_\_\_\_\_ is the process of removing salt and other impurities from seawater to produce freshwater.

(b) Define and explain the following terms (**any five**):

(2×5=10)

- (i) Algal blooms
- (ii) Stream morphology
- (iii) Water quality standards
- (iv) Streamflow alteration
- (v) Estuary
- (vi) Lotic ecosystems

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2. Write short notes on the following : (3½×4=15)

- (i) Ramsar convention
- (ii) Rainwater harvesting
- (iii) Evapotranspiration
- (iv) Watershed management

3. Write explanatory notes on the following (**any three**):  
(3×5=15)

- (a) National river linking plan
- (b) Threats to wetlands due to commercial activities
- (c) Significance of National water policy
- (d) International water conflicts

4. Differentiate between the following (**any three**):  
(3×5=15)

- (a) Surface Water and Groundwater
- (b) Biological Oxygen Demand (BOD) vs Chemical Oxygen Demand (COD)
- (c) Water Scarcity vs. Water Stress
- (d) Tributary vs Distributary

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