

M.Sc. Examination, 2019
Semester-IV
Environmental Science
Course : MEO-443
(Hydrology and Water Management)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin

Answer question No. **1** and **any four** from the rest.

1. Write short notes on **any four** of the following : 2×4=8
 - a) Concept of water scarcity and water stressed condition
 - b) Artesian well
 - c) Water balance equation
 - d) Conjunctive use of water
 - e) Watershed characteristics
 - f) Objectives of Integrated Watershed Management (IWM)
 2. Describe different consumptive and non-consumptive uses of water. Discuss the changing pattern of water use across different sectors. Explain the concept of 'water footprint'. 3+3+2=8
 3. Write a note on ground water status of India. Describe the hydrogeological conditions of the ground water provinces in India. 2+6=8
 4. a) Describe the characteristics of confined and unconfined aquifer with a neat diagram.
b) Describe the application of isotopes as tracers for groundwater management. 4+4=8
 5. a) Describe the basic concept and methods of rain water harvesting.
b) Discuss the traditional rain water harvesting methods adopted in different climatic zones of India. 4+4=8
 6. a) Discuss the problems associated with over-exploitation of groundwater.
b) Discuss the importance of conjunctive use of surface water and groundwater for water resource management. 4+4=8
 7. a) Give an account of global water balance describing the inflow and outflow of water among the global reservoirs.
b) Describe the human interactions with the hydrological processes with their possible impacts. 4+4=8
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