

**MA GEOGRAPHY**  
**Paper no. 201, Semester II**  
**Oceanography and Hydrology**

**No. of Credits: 4**

**1. Fundamental Concepts in Oceanography**

- 1.1 Definition, nature and scope of oceanography
- 1.2 Age and origin of oceans, and ocean morphology.
- 1.3 Distribution of temperature, salinity and density of oceans.

**2. Ocean Currents and Resources**

- 2.1 Ocean currents: Atlantic, Pacific and Indian Oceans.
- 2.2 waves and tsunamis, tides.
- 2.3 Marine sediments and deposits
- 2.4 Food and mineral resources of the sea.

**3. Introduction to Hydrology**

- 3.1 Hydrological cycle, Factors affecting movement of water, Patterns of movement
- 3.2 Water Budget, World water Resources,
- 3.3 World Water Balance, Global Freshwater Resources,
- 3.4 History of Hydrology

**4. Watershed, Its Characteristics and Evaporation Process**

- 4.1 Topographic and Effective Watershed
- 4.2 Physiographic characteristics of a Watershed- Geometric & Drainage Network
- 4.3 Agro-Pedo Geological Characteristics – Soil Cover, Soil type, Geology
- 4.4 Metrological Factors influencing Evaporation- Physical Factors involved inEvaporation Process.

**References:**

- 1. Agarwal A. and Narain, S. (1997), “Dying Wisdom: Rise, Fall and Potential of India’s Traditional Water Harvesting System”, CSE, New Delhi.
- 2. Andre Musy (2011) Hydrology a Science of Nature, Science Publishers, NewHampshire.

2. Centre for Science and Environment (2002), “Citizens Report”, New Delhi.
3. Charlu, T.G.K. and Dutt, D. K. (1982), “Ground Water Development in India” Rural Electrification Corporation, New Delhi.
4. Chorley, R. J. (1967), “Water, Earth and Man”, Methuen, London.
5. Chorley, R. J. (1969), “Introduction to Physical Hydrology”, Methuen, London.
6. Elizabeth M. Shaw (1994) Hydrology in Practice, Taylor & Francis e-Library Publication New Hampshire.
7. Jones, J. A. (1997), “Global Hydrology : Processes, Resources and Water Management”, Longman, London.
8. Lvovich, M.I., (2010), Climatology, Hydrology, Glaciology, John Wiley and Sons, London
9. Mather, J. R. (1984), “Water Resources : Distribution, Use and Management”, John Wiley, Maryland.
10. Singh, R. A. and Singh, S. R. (1972), “Water Management: Principles and Practices”, Tara Publication, Varanasi.
11. Subramanya K (2014) Engineering Hydrology, Mc Graw Hill Publication, New Delhi.
12. Todd, D. K. ((1959), “Ground Water Hydrology”, John Wiley, New York.
13. Stewart, R. H. (2008). *Introduction to Physical Oceanography*.
14. Garrison, T. (2012). *Essentials of Oceanography* (Sixth Edit). Brooks/Cole, Cengage Learning.
15. Singh, S. (2014). *Oceanography*. Allahabad: Pravalika Publications.
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