

## **S.Y.B.A. Geography**

### **Semester- III**

#### **Paper-II: An Introduction to Climatology**

##### **Unit-I: Introduction to Climatology**

- 1.1 Definition, nature, scope and branches of climatology
- 1.2 Concept and elements of weather and climate
- 1.3 Composition and structure of atmosphere
- 1.4 Insolation: Vertical and horizontal distribution of temperature

##### **Unit-II: Air Pressure and Atmospheric Circulation**

- 2.1 Air pressure: Influencing factors – Tricellular model
- 2.2 Horizontal distribution of air pressure
- 2.3 Wind: Types of winds – global, regional and local
- 2.4 Upper air circulation – jet stream ( concept, origin and effects)

##### **Unit-III: Humidity and Precipitation**

- 3.1 Humidity: Types - absolute, relative and specific
- 3.2 Condensation and its forms
- 3.3 Precipitation and its types
- 3.4 Global distribution of rainfall

##### **Unit-IV: Climate and Weather Phenomena**

- 4.1 Cyclones: tropical and temperate
- 4.2 Anti-cyclones and tornados

4.3 El Nino and Indian monsoon

4.4 Global warming and climate change

### **Unit-V: Practical Component**

5.1 IMD: Weather signs and symbols, Interpretation of IMD weather maps

5.2 Construction of : wind rose, climograph and hythergraph

### **Reference Books:-**

1. Ahrens, C.D. (2012): Essentials of Meteorology: An Invitation to the Atmosphere; Cengage Learning, Boston
2. Ahrens, C.D., Jackson, P.L., Jackson, C.E.J. and Jackson, C.E.O. (2012): Meteorology Today: An Introduction to Weather, Climate and the Environment; Cengage Learning; Boston
3. Barry, R.G. and Chorley, R.J. (2003): Atmosphere, Weather and Climate; Psychology Press, Hove; East Sussex.
4. Chawan S.V. (ed) (2015): Physical Geography, Paper I, Published by Director (I/C), Institute of Distance and Open Learning, University of Mumbai.
5. Critchfield, H.J., (1975): general Climatology, Prentice Hall, New Jersey.
6. Lal D.S. (1997): Climatology; Sharda Pustak Bhavan; Allahabad
7. Lydolph, P.E.( 1985): The Climate of the Earth, Rowman Nad Allanheld, Totowa, New Jersey.
8. Mather,J.R.(1974): Climatology: Fundamentals and Applications; Mc Craw Hill Book Co., U.S.A.
9. Matthews, W. H., Kellogg, W., Robinson, G.D. (1971): Man's Impact on Climate; M.I.T. Press Design Dept. U.S.A.
10. Oliver, J.E. (1993): Climatology: An Atmospheric Science, Pearson Education India, New Delhi
11. Rosenberg, N.J., Blad, B.L., Verma, S.B.(1983): Micro-climate Biological Environment; John Wiley & Sons, U.S.A.
12. Rumney, G.R. (1968): Climatology and the World Climates, Macmillan, London.

13. Shinde P. ; Pednekar H. et.al. (2010): Introduction to Geography, Sheth Publishers Pvt.Ltd., Mumbai.
  14. Subrahmanyam, V.P. (ed) (1983): Contributions to Indian Geography a) Vol III- General Climatology, b) Volume IV- Applied Climatology. Heritage Publishers, New Delhi.
  15. Trewartha, G.T. (1980): An Introduction to Climate; McGraw Hill, New York, 5<sup>th</sup> edition, (International Student Edition)
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