

**M.Sc. Examination 2018**  
**Semester-I**  
**Environmental Science**  
**Course : MEC-12**  
**(Climatology and Climate Change)**

**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) Climate system
    - b) Jet streams
    - c) Hadley cell
    - d) Wind rose
    - e) Radiation inversions
    - f) Milanokovitch cycles
  2.
    - a) Distinguish between weather and climate.
    - b) What is 'scale of meteorology'?
    - c) Discuss the relationship between relative humidity (RH) and dew point temperature 2+3+3=8
  3.
    - a) Classify the clouds with respect to their elevation and appearance.
    - b) Describe the different types of precipitation. 4+4=8
  4.
    - a) What do you mean by 'monsoon'? Discuss different theories proposed for the origin of Indian monsoon.
    - b) Briefly describe the circulation patterns in the world oceans. (1+3)+4=8
  5.
    - a) What is 'plume' and 'plume rise'?
    - b) Discuss different types of plumes on the basis of lapse rate. (1+2)+5=8
  6.
    - a) Explain the effects of greenhouse gases on global warming. Briefly describe the major greenhouse gases with respect to their sources and concentration levels in the atmosphere.
    - b) Discuss any three important COPs on greenhouse gases. (2+3)+3=8
  7.
    - a) What do you mean by 'extreme weather events'? Define 'heat wave' and 'cold wave'.
    - b) Write a brief note on the past climatic records of the Earth. (2+2)+4=8
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