

## MSc Sem.-1 Examination

402

## Climate Change

February-2025

Time : 2-30 Hours]

[Max. Marks : 70

Instructions: All Questions carry equal marks  
Attempt all Questions

- Q I      What is geological time scale? Discuss.      14
- OR
- Q I      A. Which factors control the distribution of temperature on the earth's surface? Explain with examples.      7  
B. Highlight the pressure belts on the earth's surface with a suitable diagram.      7
- Q II      Explain "Atmospheric Transport" in detail      14
- OR
- Q II      A. Write a note on Trace Gases      7  
B. Discuss Atmospheric Chemistry Facilities in India      7
- Q III      What are oxygen isotope systematics, and how do they help in understanding past climates?      14
- OR
- Q III      A. What are the different types of proxies utilized in paleoclimate research, and how do they contribute to our understanding of past climate conditions?      7  
B. What are the mechanisms by which plate tectonics affects climate change throughout Earth's history?      7
- Q IV      Write a Brief note on Tornadoes and its types      14
- OR
- Q IV      A. Explain Thunderstorms with its types and formation      7  
B. What is the difference between a Cyclone and a Tornado      7
- Q V      Attempt any 7 out of 12 MCQs/Short question (One- or Two-line answer)/ Fill in the blanks/True or False etc.      2
- 1      Amazon rainforest has which type of climate type according to Koppen's classification.
- 2      What is albedo?
- 3      Explain lapse rate?
- 4      A rotary system attached to parent cloud with a pendant like Structure at the base touching the ground is called a cyclone. True or False
- 5      Auroras are formed in the \_\_\_\_ layer of the atmosphere.
- 6      A tornado formed in dry area consisting of dust and debris is Called a \_\_\_\_\_.

(P.T.O)

- 7 Define General Circulation
- 8 Explain Vertical Transport
- 9 What is Turbulence
- 10 Which of the following statements is true regarding ice core?
- a) Lighter  $\delta^{18}\text{O}$  in ice cores corresponds to warmer conditions.
  - b) Heavier  $\delta^{18}\text{O}$  in ice cores corresponds to colder conditions.
  - c) Lighter  $\delta^{18}\text{O}$  in ice cores corresponds to colder conditions.
  - d) Ice core  $\delta^{18}\text{O}$  is not related to temperature.
- 11 What does the number of sunspots on the Sun's surface indicate?
- a) The Sun's temperature
  - b) Solar activity and magnetic field strength
  - c) The age of the Sun
  - d) The distance of the Sun from Earth
- 12 Which of the following is a consequence of volcanic eruptions on climate?
- a) Increased sunlight reaching the Earth's surface
  - b) Formation of volcanic smog that enhances greenhouse warming
  - c) Global cooling due to increased aerosols in the stratosphere
  - d) Permanent changes in ocean currents