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- (b) How do hydroxyl and hydroperoxyl radicals affect atmospheric chemistry? (5)
7. Evaluate the effects of global warming on agricultural productivity and biological responses. (15)
8. Discuss the concept of carbon credit and its role in environmental policy. (15)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4513

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Unique Paper Code : 32181303

Name of the Paper : Atmosphere and Global Climate Change

Name of the Course : B.Sc. (H) Environmental Sciences-Core

Semester : III

Duration : 3 Hours

Maximum Marks : 75

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

1. (a) Write the definition of the following (**Any five**) :  
(2×5=10)
  - (i) Milankovitch cycles
  - (ii) Earth's radiation budget

P.T.O.

- (iii) El Nino
- (iv) Gaussian plume model
- (v) Chapman cycle
- (vi) Carbon trading

(b) Fill in the blanks : (1×5=5)

- (i) The \_\_\_\_\_ effect is a major factor in the Earth's energy balance.
- (ii) \_\_\_\_\_ are large-scale patterns of atmospheric circulation that influence weather.
- (iii) The chemistry of the atmosphere is altered by \_\_\_\_\_ reactions.
- (iv) \_\_\_\_\_ in the atmosphere lead to changes in ozone layer dynamics.
- (v) \_\_\_\_\_ protocols aim to reduce emissions of ozone-depleting substances.

2. Write short notes on the following : (5×3=15)

- (i) Greenhouse gases and their impact on global warming.

- (ii) Meteorological parameters and their importance.
- (iii) Atmospheric windows and their role in climate change.

3. Write down the difference between the following :  
(5×3=15)

- (i) Earth's energy balance and global energy balance.
- (ii) Tropical cyclone and monsoon systems.
- (iii) Smog types and their formation processes.

4. Discuss the impact of urbanization on microclimate.  
(15)

5. (a) What is the significance of atmospheric stability in weather prediction?  
(8)

(b) Analyze the role of international agreements in mitigating climate change.  
(7)

6. (a) Explain the process of springtime ozone depletion over Antarctica.  
(10)