

## Bhoomiyude Pathippu

**Question.1. Divide the atmosphere into layers based on the variation in temperature with altitude . Explain the characteristics of any two of them.[Marks :(6)]**

**Ans.**

- Troposphere, Stratosphere, Mesosphere, Thermosphere (2)
- Features of any two layers (4)

**Question.2. Rearrange the items in B and C columns appropriate to column A[Marks :(3)]**

A	B	C
Troposphere	50–80 kms	Ozone Layer
Stratosphere	more than 80 kms	ionosphere
Mesosphere	18–50 kms	Meteors burn out
Thermosphere	0-18 kms	temperature decreases at a uniform rate

**Ans.**

- Troposphere - 0-18kms -temperature decreases at a uniform date.
- Stratosphere - 18–50 km - Ozone Layer
- Mesosphere - 50–80 km - Meteors burnout
- Thermosphere - more than 80 km - ionosphere

**Question.3. There is Normal Lapse rate in temperature with altitude.[Marks :(4)]**

**i) Which layer of the atmosphere experiences Normal Lapse rate?**

**ii) What is Normal Lapse rate?**

**iii) Calculate the approximate temperature at altitude of 1650 m when sea level temperature is 30° Celsius.**

**Ans. i)** Troposphere

ii) 1°C / 165 m

iii)  $1650/165 = 10$

Temperature at 1650m=  $30^{\circ} - 10^{\circ} = 20^{\circ} \text{C}$

**Question.4. Which of the following is the extent of 'homo sphere'[Marks :(1)]**

- a) 0 - 8 km
- b) Up to 50 km
- c) 50 to 80 km
- d) 0 - 90 km

**Ans. d)** 0 - 90 km

**Question.5. Beyond 90 kms above the Earth's surface, there is no uniformity in the composition of gases. What is the name of this atmospheric layer ? (1)[Marks :(1)]**

- a) The homosphere
- b) Troposphere
- c) Mesosphere
- d) heterosphere

Ans. (d) heterosphere

**Question.6. What is the relevance of ozone day?[Marks :(2)]**

(Hint:ozone depletion and adverse effects)

Ans.

- The concept of ozone depletion (1)
- Effects of ozone depletion (2)
- Need for ozone layer protection (1)

**Question.7. How harmful are UV rays to the earth? What causes UV rays to reach Earth?[Marks :(4)]**

Ans. (Any 4 harmful effects of ozon) (2)

- Gases such as chloro fluoro carbons and halogen decompose ozone. (1)
- Sources of such Gases - Refrigerator, Air Conditioners, Sprays, Combustion Gases, Paint, ... (1)

**Question.8. Explain how 'forestry combat global warming '.[Marks :(3)]**

Ans. Photosynthesis increases with forestry. Thus more carbon dioxide will be absorbed. - thereby the greenhouse effect is reduced and atmospheric heat falls.

**Question.9. 'The air temperature rises with the increase in greenhouse gases'[Marks :(3)]**

i) Name the phenomenon.

ii) How does this process threaten the survival of life?

Ans. i) Global Warming (1)

ii) (a) Sea level rises through polar ice melting-

(b) Destruction of coastal ecosystems create food shortages and migration

(c) Endanger of Species (Any Two) (2)

**Question.10. Deforestation causes the accumulation of carbon dioxide in the atmosphere. How ?[Marks :(2)]**

Ans. Deforestation increases the process of photosynthesis. This causes increase in carbon dioxide in the atmosphere.

**Question.11. write anyone reason for the increase of carbondioxide in atmosphere.[Marks :(2)]**

Ans. Deforestation increases the process of photosynthesis. This causes increase in carbon dioxide in the atmosphere.

**Question.12. Although the greenhouse effect is essential to the survival of life, it also has adverse effects. Elucidate. What are the sources of greenhouse gases?**

**[Marks :(2)]**

Ans.

- Excessive increases in greenhouse gases cause air temperature to rise. (1)
- Human activities that generate greenhouse gases - industrial fumes, deforestation, vehicle smoke / fossil fuel burning (any 2) (1)
- Natural processes that create greenhouses (1)
- Bio-degradation, volcanic eruption, ... (any 2)

**Question.13. Which of the following is not a greenhouse gas?[Marks :(1)]**

a) Carbon dioxide b) Oxygen c) methane d) ozone

Ans. (d) Oxygen

**Question.14. Cloudy days are warmer. Why ? [Marks :(2)]**

Ans. Water vapour and clouds contribute to the greenhouse effect. It blocks the terrestrial radiation and absorbs more heat. Thus the lower atmosphere remains warm

**Question.15. What are greenhouses? Explain the greenhouse effect .[Marks :(4)]**

Ans.

- Glass roofed homes are being built to protect plants from harsh winter conditions. This helps the plants retain the heat they need, as it injects solar radiation and prevents radiation. Such structures are greenhouses.
- Gases such as Carbon dioxide, methane, ozone etc. and water vapour present in the atmosphere absorb the terrestrial radiation and retain the temperature of the atmosphere. This phenomenon is called Greenhouse effect and the gases causing the phenomena are called Greenhouse gases.

**Question.16. Dust particles in the atmosphere are some times called condensation nuclei. Why?[Marks :(2)]**

**Ans.** Water vapour condenses around fine dust particles in the atmosphere to form clouds.

**Question.17. The fine dust particles in the atmosphere are very significant in climate. Elucidate.[Marks :(2)]**

**Ans.** Water vapour condenses around fine dust particles in the atmosphere to form clouds.

**Question.18. What are the sources of dust particles to the atmosphere?[Marks :(2)]**

**Ans.**

- volcanic eruptions
- meteorites being burned to ash

**Question.19. Which of the following places is most likely to have the highest amount of atmospheric humidity? Why?[Marks :(2)]**

**(a)Thiruvananthapuram**

**(b)Bangalore**

**(c)Delhi**

**(d)Hydrabad**

**Ans.**

- Thiruvananthapuram
- Thiruvananthapuram is near the sea

**Question.20. Give reasons for the following circumstances .[Marks :(2)]**

**i) The atmospheric humidity is high in equatorial regions but low in the polar regions.**

**ii) Humidity is less inland than in coastal areas.**

**Ans.**

- i) In tropical areas, evaporation is high. So high humidity.
- ii) Evaporation is more likely to occur near terrestrial water bodies (ocean, lake, rivers)

**Question.21. Oxygen, carbon dioxide and nitrogen are equally important in sustaining life on Earth. Substantiate.[Marks :(3)]**

**Ans.**

- Plants utilize carbon dioxide for photosynthesis
- Organisms including humans, use oxygen to breathe.
- Plants use nitrogen gas for their growth through nitrogen fixation.

**Question.22. Rearrange the gases in the descending order of their proportion in the atmosphere.[Marks :(1)]**

**Ans.**

- Argon - oxygen - carbon dioxide - nitrogen