

GEOGRAPHY

CLASS 7

CHAPTER – ATMOSPHERE

E/

Q 1) What is the composition of the atmosphere?

Ans: The atmosphere composed of mixture of gasses, Water vapour, dust particles, pollen grains and many impurities (smoke, salt and other chemicals). The main constituent gasses are nitrogen (78%), oxygen (21%), and other gasses such as carbon dioxide, argon, hydrogen, helium and ozone (remaining 1%). (Fig. 2.2)

Q2) Define the term 'normal lapse rate of temperature'.

Ans: Normal lapse rate of temperature is the decrease of temperature at the rate of 1°C for every 165m increase in height.

Q 3) Mention two uses of carbon dioxide gas.

Ans: Two uses of carbon dioxide gas are:

- Carbon dioxide is used by plants to produce food in the presence of sunlight.
- It also keeps the earth warm.

Q4) How is ozone gas important for us?

Ans: Ozone gas important for us because:-

- Ozone gas absorbs the harmful ultraviolet rays of the sun.
- It is the best protector against ultraviolet rays from the sun which are cancerous to humans and can destroy other living organisms.

Q 5) What do you understand by green house effect?

Ans: The increase in atmospheric temperature due to the concentration of the green house gasses is known as green house effects.

Q 6) Name some green house gasses. Why are they called so?

Ans: Green house gasses are – carbon dioxide, methane, chlorofluorocarbons and nitrogen oxide.

Gasses like carbon dioxide, methane, chlorofluorocarbons and nitrogen oxide are known as green house gasses because they allow the Sun's rays to enter but prevent the heat from the Earth to radiate back into space. They are responsible for raising the atmospheric temperature.

Q 7) What is global warming? State its main causes.

Ans: Green house effect of the atmosphere and destruction of the ozone layer have led to the phenomenon called global warming, which means increase in the average temperature on the earth.

MAIN CAUSES ARE:

1) **Burning of fossil fuel:** - It is a source of heat trapping pollution which comes from power plants, vehicles and industries in the form of carbon dioxide.

2) **Fertilisers:** - Artificial nitrogen in the form of fertilisers increases the nitrogen oxide in the atmosphere.

3) **Mining and deforestation:** - It leads to the increase in carbon dioxide in the atmosphere which is a major cause of global warming.

4) **Rearing of farm animals:-** Farm animals add methane in the atmosphere through their dung .

F/

Q 1: Mention the characteristics features of the stratosphere.

Ans: **Characteristics of stratosphere are –**

- 1) This layer lies above the troposphere and it extends to the height of 50 km above Earth's surface.
- 2) In upper part there is a gradual increase in temperature.
- 3) No clouds, no convectional current and no weather phenomena in this layer.
- 4) This layer contains ozone which absorbs ultra violet radiations of the sun.

Q2: Explain the causes of depletion of the ozone layer.

Ans: **Causes are:-**

- 1) Ozone layer is being depleted because of the increase in the level of carbon dioxide and chlorofluorocarbon in the lower atmosphere.
- 2) The amount of carbon dioxide in the atmosphere increases due to deforestation, burning of fossil fuel and automobile emissions.
- 3) Chlorofluorocarbons are used in refrigerator, air conditioner, air craft.

- 4) Large scale volcanic eruptions, emit toxic gasses like sulphur dioxide, and are responsible for ozone depletion.

Q3) Describe the impact of global warming and mention some ways by which it can be reduced.

Ans: **Impact of global warming:**

- 1) The melting of glaciers causing the rise in sea level.
- 2) Change in the global rainfall pattern.
- 3) Change in the agricultural yield.

Ways to reduce the global warming:

- 1) Control deforestation
- 2) Cutting down on vehicular emission
- 3) Reducing use of Chlorofluorocarbon gases.

G/

Q1: Explain why the troposphere is considered to be the most important layer of the atmosphere?

Ans: Troposphere is considered as the most important layer of the atmosphere because:-

- A) All weather phenomena, such as, cloud, rainfall, storms etc. occur in this layer.
- B) The temperature of the air decreases with the increase in height at rate of 1°C for every 165 m, which is known as normal lapse rate.
- C) This layer absorbs maximum heat radiated by the earth's surface and keeps the earth warm, as this layer is the lowest and the densest layer of the atmosphere.

Q 2): 'Life would not have existed on Earth without the presence of atmosphere'. Support this statement with suitable reason.

Ans: Atmosphere is useful to us in various ways:

- Oxygen in the atmosphere is inhaled by all living things.
- Carbon dioxide is used by plants to produce food in the presence of sunlight. It also keeps the earth warm.
- Nitrogen maintains the fertility of the soil.

H/ Why do u think so?

1) The stratosphere is ideal for air traffic.

Ans: The stratosphere is ideal for air traffic because,

- There is virtually no cloud and very little dust and water vapour in this layer.
- Convection currents of air are also absent, so are all sorts of weather phenomena.

2) The thermosphere is useful in wireless communication.

Ans: The thermosphere is useful in wireless communication because, this layer contains electrically charged particles called ions .These particles reflect radio waves back to earth's surface and enable us to have wireless communication.

3) Air pressure decreases with altitude.

Ans: i. Air pressure decreases with altitude because, air pressure depends on the temperature of the air and altitude. Warm air is light and exerts low pressure while cold air is heavy and exerts high pressure.

ii. Earth's gravitation pull air as close to the earth's surface as possible but as altitude increases, the amount of gas molecules in the air decreases. Hence, the air becomes less dense than air nearer to sea level.

4) There is an increase in amount of green house gasses in the atmosphere.

Ans: There is an increase in amount of green house gasses in the atmosphere because:-

- Gasses like carbon dioxide, methane, chlorofluorocarbons and nitrogen oxide are known as green house gasses because they allow the Sun's rays to enter but prevent the heat from the Earth to radiate back into space.
- Burning of fossil fuels and factory emissions also increases the amount of green house gasses in the atmosphere.

HOMEWORK:

Draw neat and well labelled diagrams to show the following:

1. Composition of the atmosphere.(fig. 2.2)

2. Structure of the earth.(fig.2.3)
