DELHI PUBLIC SCHOOL FIROZABAD

(UNDER THE AEGIS OF DELHI PUBLIC SCHOOL SOCIETY EAST OF KAILASH NEWDELHI)

(A SENIOR SECONDARY SCHOOL)

AFFILIATED TO CBSE, AFFILIATION NO. 2133064 SCHOOL NO: 61225

Class-VII

Atmosphere

Name:
Roll no:
Date:
MM-10

1

Consider the following assertions:

1. Nitrogen is the most plentiful gas in the air.
2. When we inhale, we take some amount of nitrogen into our lungs and exhale it.
3. Plants fulfil their need of nitrogen, directly from the air.

Which of the above assertions is/are true?

A

1 and 2

B

2 and 3

C

1 and 3

D

1, 2 and 3

Explanation

Nitrogen is the most plentiful gas in the air. When we inhale, we take some amount of nitrogen into our lungs and exhale it. But plants need nitrogen for their survival. They cannot take nitrogen directly from the air. Bacteria that live in the soil and roots of some plants take nitrogen from the air and change its form so that plants can use it.

2

What is the correct sequence of gases found in the atmosphere on the basis of the percentage in descending order?

A

Nitrogen > oxygen > helium > carbon dioxide

B

Nitrogen > oxygen > carbon dioxide > argon

C

Nitrogen > oxygen > argon > carbon dioxide

D

Nitrogen > oxygen > methane > carbon dioxide

Explanation

Atmosphere is a mixture of many gases in which —

Nitrogen	78%
Oxygen	21%
Argon	0.93%
Carbon dioxide	0.03%
All other gases	0.04%

3

All the weather phenomena like rainfall, fog and hailstorm occur in which layer?

A

Troposphere

B

Stratosphere

C

Mesosphere

D

Thermosphere

Explanation

The troposphere is the most important layer of the atmosphere. Its average height is 13 kilometers. The air we breathe exists here. Almost all the weather phenomena like rainfall, fog and hailstorm occur in this layer.

4

Which of the following assertions related to the stratosphere is/are true?

1. The sphere above the troposphere is called stratosphere.
2. This layer is almost free from clouds and associated weather phenomenon.
3. It contains a layer of ozone gas.

Code:

A

1 and 2

B

2 and 3

C

1 and 3

D

All of the above

Explanation

All the three assertions related to the stratosphere are true.

5

Aeroplanes fly in which layer of the atmosphere?

A

Troposphere

B

Mesosphere

C

Stratosphere

D

Thermosphere

Explanation

The stratosphere is almost free from clouds and associated weather phenomenon, making conditions most ideal for flying aeroplanes.

6

The meteorites coming from space begin to burn as soon as they enter in which layer of the atmosphere?

A

Troposphere

B

Stratosphere

C

Mesosphere

D

Thermosphere

Explanation

Mesosphere is the third layer of the atmosphere. It lies above the stratosphere. It extends up to the height of 80 km. Meteorites burn up in this layer on entering from the space.

7

Consider the following assertions:

1. In thermosphere temperature rises very rapidly with increasing height.
2. Troposphere helps in radio transmission.

Which of the above assertions is/are true?

A

1 only

B

2 only

C

Both 1 and 2

D

Neither 1 nor 2

Explanation

- The temperature rises very rapidly with increasing height in the thermosphere. The ionosphere is a part of the thermosphere. It extends between 80-400 km. **Hence, statement 1 is correct.**
- Radio waves transmitted from the earth are reflected back to the earth by the thermosphere and not by the troposphere. **Hence statement 2 is not correct.**
- The troposphere is the most important layer of the atmosphere. Its average height is 13 km. The air we breathe exists here. Almost all the weather phenomena like rainfall, fog and hailstorm occur in this layer.

8

Which of the following assertions is/are true?

1. Insolation is the incoming solar energy intercepted by the earth.
2. The amount of insolation remains the same everywhere on the Earth.

A

1 only

B

2 only

C

Both 1 and 2

D

Neither 1 nor 2

Explanation

Only assertion 1 is correct. But the assertion 2 is wrong; The amount of insolation decreases from the equator towards the poles. Therefore, temperature decreases in the same manner. If the earth's temperature rises too high, it would become too warm for some crops to grow. Temperature in cities is much higher than that of villages. The concrete and metals in buildings and the asphalt of roads get heated up during the day. This heat is released during the night. Also, the crowded high rise buildings of the cities trap the warm air and thus raise the temperature of the cities.

9

Read the following assertions carefully:

1. Horizontally the distribution of air pressure is influenced by temperature of air at a given place.
2. The low pressure area is associated with cloudy sky and wet weather.
3. High pressure is associated with clear and sunny skies.
4. Air always moves from high pressure areas to low pressure areas.

Which of the above assertions is/are true?

A

1 and 2 only

B

2, 3 and 4 only

C

1, 3 and 4 only

D

All of the above

Explanation

Air pressure is defined as the pressure exerted by the weight of air on the earth's surface. The air pressure is highest at sea level and decreases with height. Horizontally the distribution of air pressure is influenced by temperature of air at a given place. In areas where temperature is high the air gets heated and rises. This creates a low-pressure area. Low pressure is associated with cloudy skies and wet weather. In areas having lower temperature, the air is cold. It is therefore heavy. Heavy air sinks and creates a high pressure area. High pressure is associated with clear and sunny skies. The air always moves from high pressure areas to low pressure areas.

10

Which of the following combinations is/are right?

1. Winds that blow constantly throughout the year in a particular direction – Local winds
2. Winds that change their direction in different seasons – Seasonal winds
3. Winds that blow only during a particular period of the day or year in a small area – Permanent winds

A

1 only

B

2 only

C

1 and 3

D

2 and 3

Explanation

Combinations 1 and 3 are not correctly matched.

- Permanent winds – The trade winds, westerlies and easterlies are the permanent winds. These blow constantly throughout the year in a particular direction.
- Seasonal winds – These winds change their direction in different seasons. For example monsoons in India.
- Local winds – These blow only during a particular period of the day or year in a small area. For example, land and sea breeze; and loo, the hot and dry local wind of northern plains of India.