Chapter – 4
Air

Exercise

1.

(A) What is atmosphere?

Answer:

Atmosphere is the thick blanket of air that surrounds the surface of the earth. It is divided into different layers.

(a) Troposphere: It is the first layer of the atmosphere that is just above the surface of the earth. The air that we breathe is present in this layer. This supports life on the earth.

(b) Stratosphere: Above the troposphere lies the stratosphere. It extends up to a height of 50 km. The ozone layer is present in this layer. Airplanes fly in this layer.

(c) Mesosphere: This 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.

(d) Thermosphere: In thermosphere temperature rises very rapidly with increasing height. Ionosphere is a part of this. This layer helps in radio transmission.

(e) Exosphere: The upper most layer of the atmosphere is known as exosphere. This layer has very thin air.

(B) Which two gases make the bulk of atmosphere?

Answer:

(a) Nitrogen. It occupies about 78% of the air around us.

(b) Oxygen. It occupies about 21% of the air around us.

(C) Which gas creates greenhouse effect in atmosphere?

Answer:

Carbon dioxide. Carbon dioxide, along with other gases such as methane and carbon monoxide, is one of the major contributor in causing the greenhouse effect.

(D) What is weather?

Answer:

Weather includes the atmospheric conditions that change hour-to-hour. Weather of a place keep changing day-to-day and even hour-to-hour. A record of these atmospheric conditions over a long period of time determines the climate of that place.

ame three types of rainfall?

:

(i) The convectional rainfall: when water vapours rise up, they reach high above the surface of the earth and cool down to form clouds. When clouds cannot hold any more water, they fall down as rainfall.

(ii) The Orographic rainfall: It occurs when the moist air rises up the mountain, forms the orographic clouds and falls as rainfall.

(iii) The Cyclonic rainfall: It occurs when the cyclonic winds of different temperature, humidity densities meet.

(F) What is air pressure?

Answer:

The air that is present around us exerts pressure on almost everything. This is called air pressure or atmospheric pressure. The air pressure decreases as we go up in the air. This is why mountaineers face difficulty in breathing and sometimes their nose bleeds because pressure of blood inside the veins becomes more than the air pressure.

2.

(A) Tick the correct Answer.
Which of the following gases protects us from harmful sun rays?
(a) Carbon dioxide.
(b) Nitrogen.
(c) Ozone.

Answer:

It is the layer that prevent harmful ultraviolet rays from reaching the surface of the earth.

(B) Tick the correct Answer.

ne most important layer of the atmosphere is.
) Troposphere.
(b)Thermosphere.
(c) Mesosphere

Answer:

It is the most important layer of the atmosphere because it is the only layers that supports life.

(C) Tick the correct Answer.
Which of the following layers of atmosphere is free from clouds?
(a) Troposphere.
(b) Stratosphere.
(c) Mesosphere

Answer:

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

(D) Tick the correct Answer.
As we go up the layers of the atmosphere, the pressure
(a) Increases.
(b) Decreases.
(c) Remain same.

Answer:

As we go up the atmosphere the air pressure decreases. The air pressure is highest at sea level and decreases with height.

(E) Tick the correct Answer.
When precipitation comes down to the earth in the liquid form, it is called

) cloud
) Rain
(c) Snow

Answer:

The water vapour condenses when they reach high up in the air and forms cloud. The clouds are just masses of such water droplets. When these droplets of water become too heavy to float in air, then they come down as precipitation or rain.

3. Match the following:

(i) Trade Winds	(a) Incoming solar energy
(ii) Loo	(b) Seasonal wind
(iii) Monsoon	(c) Horizontal movement of Air
(iv) Wind	(d) Layer of ozone gas
	(e) Permanent wind
	(f) Local wind

Answer:

(i)Trade winds (c) Permanent wind

These winds blow constantly throughout the year in a particular direction.

(ii) Loo (d) Local wind

low only during a particular period of the day or year in a rea.

(iii) Monsoon (a) Seasonal

The monsoon winds carry clouds that cause rains in the monsoon season. This is why monsoon winds are seasonal winds.

(iv) Wind (b) Horizontal movement of air

When the air moves horizontally from high pressure to low pressure, winds blow.

4.

(A) Give reasons
Wet clothes take longer time to dry on a humid day?

Answer:

On a humid day, the air already contains a lot of moisture or water vapours in it. This is why wet clothes take longer time to dry as very less water evaporates from them.

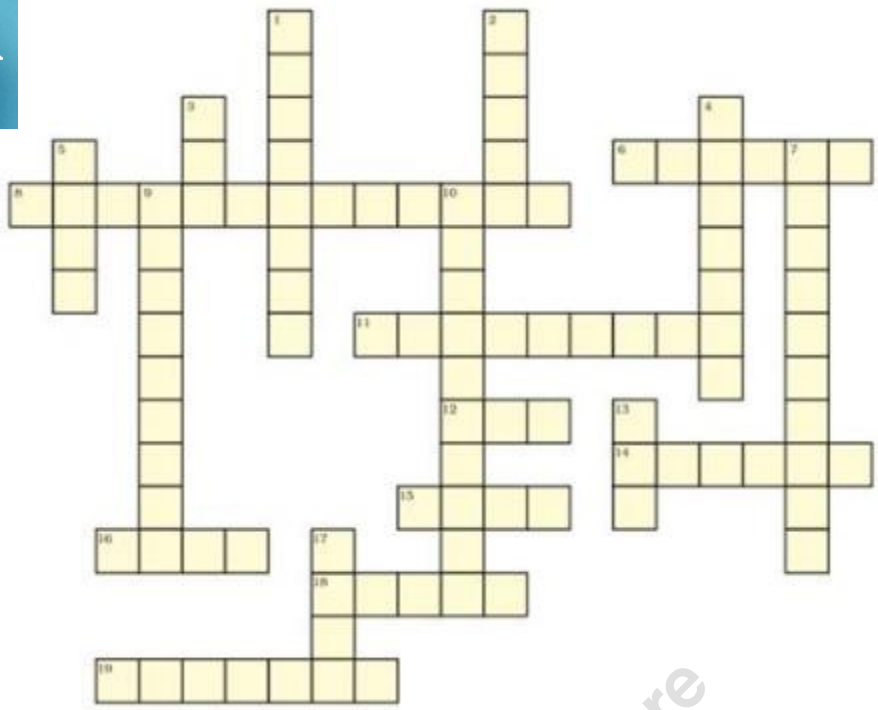
(B) Give reasons
Amount of insolation decreases from equator towards poles?

Answer:

Insolation is the incoming solar energy intercepted by the earth. The amount of insolation decreases from the equator towards the poles. It happens as the sunrays fall slanting on the poles while they fall straight at the equator.

5.

(A) For fun
Solve this crossword puzzle with the help of given clues:



Across

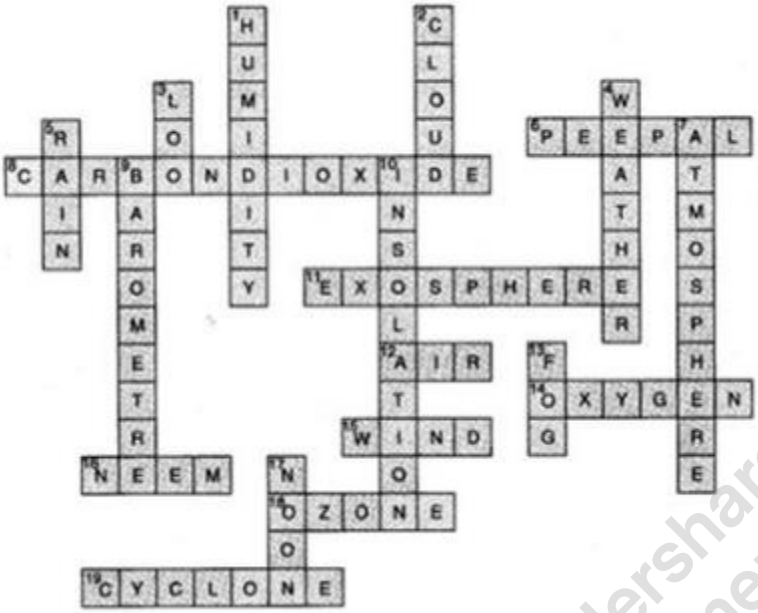
6. An Indian tree having extraordinary quality of providing oxygen round the clock
8. Gas present in atmosphere occupying only 0.03% by volume
11. Outermost layer of atmosphere
12. Mixture of many gases
14. Life giving gas
15. Air in motion
16. An Indian tree valued highly for medicinal properties
18. Gas protecting us from harmful sunrays
19. Low pressure area

Down

1. Amount of water vapor in air
2. Condensation of water vapors around dust particles in atmosphere
3. Example of local wind blowing in summer in northern India
4. Short term changes in atmosphere
5. Precipitation in liquid form
7. Blanket of air around the earth
9. Instrument to measure pressure
10. Incoming solar radiation

3. Reduces visibility in winters
7. It is ..... time when sun is overhead.

Answer:



(B) For fun

Make a weather calendar for one weak. Use pictures or symbols to show different types of weather. You can use more than one symbol in a day, If the weather changes. For example, the sun comes out when rain stops. An example is given below:

Day	Weather
1. 	Sunny day
2.	
3.	
4.	
5.	
6.	
7.	

Answer:

Day	Weather
1. 	Sunny day
2. 	Cloudy day
3. 	Rainy day
4. 	Stormy day
5. 	Calm day