

CHAPTER :- 8Winds, storms and Cyclones

EXERCISES

A. Very-short Answer Questions.

1. What does air contain?

Ans Air contains nitrogen, oxygen, a small fraction of carbon dioxide and other gases.

2. In which part of the atmosphere do we live?

Ans Troposphere.

3. What does cloudy sky and wet weather indicate?

Ans Low Pressure

4. What is the calm area at the centre of a cyclone called?

Ans Eye of the cyclone.

Teacher's Signature _____

5. How does a tornado look like?

Ans Like a twisting funnel.

(B) Short - Answer Questions:

1. When you drink a soft drink with the help of a straw what forces the liquid to rise up in the straw?

Ans Due to the difference in the pressure of the air inside and outside the straw the liquid rises up in the straw.

2. Why is warm air lighter than cold air?

Ans Air expands on heating. Due to expansion air occupies more space (or volume). As a result, its density decreases and it becomes lighter. Thus warm air is lighter than the cold air.

3. What are tornadoes?

Ans A tornado is a dark funnel shaped cloud that reaches from the sky to the ground. A tornado looks like a twisting ~~fun~~ funnel of air. As it goes, it sucks up anything on its path including buildings, trees, cows and

Teacher's Signature _____

cars and draps them when its force decreases.

4. Where do the hurricanes occur frequently?

Ans. Hurricanes frequently occur in the Gulf of Mexico, the Caribbean sea and western Pacific Ocean.

5. How does a cyclone alert differ from a cyclone warning?

Ans. A cyclone alert is issued 48 hours in advance of the expected beginning of the adverse weather over coastal areas.

A cyclone warning is issued ~~24~~ 24 hrs in advance through wireless network.

(C) Long - Answer Type Questions.

1. How does atmospheric pressure influence weather?

Ans (i) Low pressure is associated with cloudy sky and wet weather.

(ii) High pressure is associated with clear and sunny sky.

2. How are wind currents generated?

Ans Wind currents are generated due to uneven heating on the earth.

(i) Uneven Heating Between the Equator and the Poles. → The air in the polar region is colder than that at latitude 30° - 60° . Thus the warm air from 30° - 60° belt moves up and the colder air moves down from the polar regions. Such movements of air from warmer to the colder and from the colder to the warmer regions give rise to wind currents.

(ii) Uneven Heating of the Land and Water on the Earth.

3. How are thunderstorms formed?

Ans The warm rising winds carry droplets of water up upwards. At higher altitude, the water droplets freeze and fall towards the Earth due to gravity. During downward journey, the frozen droplets melt to form water droplets. These water droplets fall down as heavy rain. This falling water along with the rising warm air and lightning gives rise to a thunderstorm.

Teacher's Signature _____

4. What is a cyclone? How are cyclones formed?

Ans The moist air over the sea and oceans gets heated by sunrays, creating a region of low pressure. Cold air rushes to fill the space created by the rising warm air. This process continues setting up a current of air. The rotation of the earth drags this air current around the region of low pressure. This is how a cyclone is formed.

5. Mention three damaging effects and three safety measures against cyclones.

Ans Three damaging effects of cyclones are:-

(i) Cyclones push water and produce water waves causing floods.

(ii) It causes loss of fertility of the soil.

(iii) High speed winds of a cyclone can damage building, telephone and electricity systems, uproot trees and other destruction.

Three safety measures against cyclones.

- (i) People should follow the guidelines provided by the agencies through TV, Radio, Phone etc for their safety against cyclone.
- (ii) Do not drive on roads which are under water. The flood might have damaged the road.
- (iii) Keep ready the phone numbers of all emergency service, e.g, Police, Fire brigade, Hospital etc.

(E) Define the following term :-

1. Troposphere → Troposphere is a layer of atmosphere where we live. It mainly consists of nitrogen (78.1%), oxygen (20.9%), about 0.03% of carbon dioxide and water vapour.
2. Atmospheric pressure → The pressure exerted by the air at any point on the earth is called atmospheric pressure at that point.
3. Thunderstorm → The swift movement of the falling falling water alongwith rising warm air producing sound, lightning, heavy rain, and strong wind is called thunderstorm.

Teacher's Signature _____

4. Cyclones → A small low-pressure system with very high speed winds revolving around it is called cyclone.

5. Tornadoes → A tornado is a dark funnel shaped cloud that reaches from the sky to the ground.

6. Tick the odd-one out giving reasons -

1. Troposphere, Stratosphere, Ozone layer, Flying zone of supersonic aircraft.

Ans Stratosphere is the flying zone of supersonic aircraft and ozone layer lies in the central zone.

2. Reduced atmospheric pressure, High speed winds, Cloudy sky, Rain, Sunny sky.

Ans Sunny sky → Others are concerned with reduced air pressure

3. Moisture, Rapidly rising warm air, Mountains, Heavy rains, Thunderstorms, Hurricanes.

Ans Hurricanes → Others are concerned with thunderstorm.

Teacher's Signature _____

4. Cyclone alert, 48 hours, 24 hours, cyclone watch

Ans Cyclone alert or cyclone watch is issued 48 hours in advance.

5. Tornadoes, Twisting funnel, Depressions, Waterspout.

Ans Depressions → Others are concerned with tornadoes

(HOTS) Higher Order Thinking Skills.

1. In which directions do you normally expect wind to blow in the two latitude belts of 0° - 30° N, and 0° - 30° S? Give reasons.

Ans Since the air near the equatorial region gets warm, it rises and cooler air from the regions in the 0° - 30° latitude belt on the either side of the equator moves in. These winds blow from the north and the south towards the equator. The winds would have blown in the north-south direction from ~~from~~ north to south or from south to north.

Teacher's Signature _____

2. How would the pattern of wind circulation get affected if the earth would rotate east to west instead from west to east?

Ans A change in the direction of wind pattern would be caused by the change in the rotation of the earth.