

Ch 14

(E)

Ans 1.) Moving air is called wind.

Ans 2.) The pressure exerted by air is called air pressure. The air in the atmosphere exerts pressure on every object and in all directions.

Ans 3) It is thunderous sound. Thunder and lightning occur together in the clouds. It fades away when the rising column of hot air cuts off due to decreased precipitation.

Ans 4) If the earth's surface in a region is heated ^{up} by the strong sun, the air over it becomes lighter and rises up. This produces a region of low pressure on the earth's surface. Winds are caused by the movement of air from a region of high pressure to a region of low pressure.

Ans 5) The poles are regions of high pressure. The air in equatorial regions get ~~to~~ heated and rises and the cooler air from the surrounding regions move in. Thus, winds blow from the north and south towards the equator. At the poles, the air is cooler than that at latitudes about 60 degrees.

Ans 6) Direction and speed are two main characteristics of wind. The direction of wind is judged by an instrument called a wind vane or also known as weather vane. The head of the weather vane is the direction from where the wind is blowing.

The speed of the wind is measured by an instrument called anemometer.

Ans 7.) Swirling around a low pressure centre called the eye of the storm. This low pressure area is called the ~~the~~ storm centre. Cyclones are huge and are very powerful storms.

Ans 8.) It is a whirling and twisting funnel of wind. It is formed when a funnel like column of cold air sinks down from a storm cloud.

(F) Answer in details:-

Ans 1.) Hot air rises up. Tie a ruler with a piece of string at its centre. Tie two large paper bags to the ends of the ruler so that the ruler stays balanced on both the sides. Now put a burning candle below one of the bags. The balance of the bags is disturbed because the air in this bag heats up and so becomes lighter. The bag with the burning candle beneath it goes up. This is because air above the candle gets heated and rises up and pushes the bag from below. This proves that hot air rises up.

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Ques 2) If the earth's surface in a region is heated up by the strong sun, the air produces a region of low pressure and rises up. This movement of air from a region of high pressure to a region of low pressure uneven currents are generated due to heating of the earth. The speed of winds depends on the difference in pressure.

Ans 3) It develops when warm humid air near the ground receives an initial upward push from converging surface winds and rises rapidly in an unstable atmosphere. The water droplets and ice crystals collide with each other. Due to the swift rising air, the lightning heats up the surrounding and make the air expand very fast. In ~~turn~~ turn, it produces a thunderous sound. Thunder and lightning occurs together in the clouds.

Exercise

A. Tick (✓) the correct option :

1. Air exerts pressure:
 - a. downwards
 - b. sideways
 - c. upward
 - d. in all directions
2. Which of these is seen only in tornado?
 - a. Lightning
 - b. Rotating wind funnel
 - c. Eye
 - d. Thunder
3. During a thunderstorm:
 - a. lightning is followed by thunder
 - b. lightning and thunder occur together
 - c. thunder is followed by lightning
 - d. none of these
4. Which of the following is not associated with cyclones?
 - a. Volcanic eruptions
 - b. Tidal waves
 - c. Heavy rains
 - d. Stormy winds

5. When the speed of moving air is slow it is called:
- a. Storm b. Thunderstorm
 c. Breeze d. Cyclones
6. The pressure exerted by the air:
- a. air pressure b. air produce
 c. wind d. storm

B. Fill in the blanks :

1. Warm air is lighter than cold air and rises up.
2. The main cause of wind is difference in temperature between any two regions.
3. Air expands on heating.
4. When heated air rises up, a low pressure area is formed.
5. A cyclone is also called typhoon.
6. Thunderstorm is accompanied by high speed winds thunder and lightning.
7. The low pressure area is called storm.
8. The air pressure is determined with barometer.

C. Match the following :

- | | |
|----------------------------------|----------------------|
| 1. Cyclones | 2 a. Twisting funnel |
| 2. Torando | 5 b. Atmosphere |
| 3. Air pressure | 4 c. Thunder |
| 4. Thunderstorm | 1 d. Eye |
| 5. Air which surrounds the earth | 3 e. Barometer |

D. Answer in one word :

1. Thick layer of air around the earth.
2. Moving air.
3. Pressure exerted by air.
4. It tells us the direction of wind.
5. Swirling around a low pressure centre.
6. Whirling and twisting funnel of wind.

Atmosphere
wind
Air pressure
wind vane
Eye
Tornado

E. Answer in short :

F. Answer in detail :

1. Explain how temperature differences result in the movement of air.
2. How are wind currents formed?
3. How does a thunderstorm develop?
4. How can you explain how that air expands on heating?
5. How are cyclones formed? *do your self*
6. What precautions are needed in the cyclone prone areas?



HOTS

do your self

1. Do you think that wind energy is transformed form of the sun's energy? Give reasons.
2. 'A cyclone that started in the desert of Rajasthan, hits Delhi today.' Is the news statement true? Why?