

SUBJECT – SCIENCE

CLASS – VII

CHAPTER – 8, WINDS, STORMS AND CYCLONES

1 MARK QUESTIONS

1. Define wind.

Moving air is called wind.

2. What is wind vane?

Wind vane is an instrument which is used to find the direction of the wind.

3. What is the principle of hot air balloon?

Principle – hot air rises up and cold air sinks.

4. In which area the thunderstorm generally develops?

Thunderstorm generally develops in hot and humid tropical areas.

5. What is thunderstorm?

A thunderstorm is a storm accompanied with lightning and thunder.

6. What is a cyclone?

Low pressure system with very high speed winds revolving around it is called a cyclone.

7. What is anemometer?

Anemometer is an instrument which is used to measure the speed of wind.

8. What is tornado?

Tornado is a dark violent funnel shaped cloud that reaches from the sky to the ground.

2 MARK QUESTIONS

9. How are winds caused?

When the air gets heated up due to the sun, it becomes lighter and rises up. The cool air which is heavier then comes down to take its place. This movement of air causes winds.

10. How wind currents are generated by nature?

Wind currents are generated due to

- Uneven heating between the equator and the poles
- Uneven heating of land and water

11. Why smoke goes up?

On heating, the air expands and occupies more space and becomes lighter. The warm air is therefore, lighter than the cold air and as a result, it rises up. That's why smoke goes up.

12. What are the factors that contribute to the development of cyclones?

Factors like wind speed, wind direction, temperature and humidity contribute to the development of cyclones.

13. What are the other names of cyclone?

A cyclone is called a hurricane in American continent and typhoon in Philippines and Japan.

3 MARKS QUESTIONS

14. With the help of an activity explain that high speed wind is accompanied by reduced air pressure.
Hold a strip of paper and blow over it. We will see that it will go upwards. This could happen if blowing over the paper reduced the air pressure.
Thus, increased wind speed is accompanied by reduced air pressure.
15. What happens when strong winds blow over weak roofs of buildings?
Due to strong wind, the air pressure above the roof decreases and become lesser than the air pressure beneath the roof. Air moves from the area of higher pressure to area of lower pressure and as a result the roof could be lifted and may blow away.
16. “Air expands on heating”, Explain with an activity.
- Stretch a balloon tightly over the neck of a boiling tube.
 - Pour some hot water in a beaker. Insert the boiling tube with the balloon in the hot water.
 - The balloon will inflate. This shows that air expands on heating.
17. With the help of an activity explain that warm air rises up.
- Take two empty paper cups of the same size.
 - Hang the two paper cups in an inverted position on the two ends of a stick and tie a piece of thread in the middle of the stick and balance the balloons.
 - Put a burning candle below one of the bags. The bag rises up and the balance gets disturbed. This happened because warm air rises up and it pushes the bag above the candle to rise.
18. Define and explain monsoon winds.
- Rain bearing winds which blow from ocean towards the land are called monsoon winds.
 - In summer, near the equator the land warms up faster than that of the water in the oceans. The air over the land gets heated and rises. This causes the winds to flow from ocean towards the land. The winds from the oceans carry water and bring rain.
19. What precautions should be taken during thunderstorm?
- ✓ Do not take shelter under an isolated tree.
 - ✓ Do not take shelter under an umbrella with a metallic rod.
 - ✓ Do not take shelter near a window, open garage, storage shed and metal shed.
 - ✓ If you are in water, get out and go inside a building.
 - ✓ A car or a bus is a safe place to take shelter.
20. How a thunderstorm becomes a cyclone?
- Water takes up heat from the atmosphere to change into vapour.
 - When water vapour changes back to liquid to form rain drops, this heat is released to the atmosphere.
 - The heat released warms the air around. The air tends to rise and causes a drop in pressure. More air rushes to the centre of the storm. This cycle is repeated and results in the formation of a cyclone.

21. Explain structure of a cyclone.

- A large cyclone is a violently rotating mass of air in the atmosphere, 10 to 15 Km high.
- The centre of a cyclone is a calm area. It is called the eye. The diameter of the eye varies from 10 to 30 Km. It is a region free of clouds and has light winds.
- Around this calm and clear eye, there is a cloudy region of about 150 Km in size. In this region, there are high speed winds and thick clouds with heavy rain.

22. What are the safety measures that need to be followed during a cyclone?

- Stay indoors, preferably on the ground floor and if possible in the basement during the storm.
- Keep an emergency medical kit at home.
- Store enough food materials and drinking water.
- Keep emergency phone numbers of hospitals, police, fire brigade and medical centres.
- Do not touch wet switches and fallen power lines.
- Do not go out just for the sake of fun.
- Cooperate and help your neighbours and friends.
- Do not stand near metallic objects or near an open window.

23. What are the dangers associated with cyclones?

- Cyclones are accompanied by very strong winds which can damage houses, telephones and other communication systems, thus causing tremendous loss of life and property.
- The low pressure lifts the water surface. As a result, the sea water enters the low lying coastal areas causing severe loss of life and property. It reduces fertility of soil.
- Cyclones may cause prolonged heavy rain. This may lead to flood.

SUBJECT – SCIENCE

CLASS – VII

CHAPTER – 9, SOIL

1 MARK QUESTIONS

1. What is soil?
The mixture of rock particles and humus is called soil. It is very important natural resource.
2. What is humus?
The dead and decaying remains of plants and animals which increases the fertility of soil is called humus.
3. Which type of soil retains the highest amount of water and which retains the least?
Clayey soil retains the highest amount of water and sandy soil retains the least amount.
4. Which type of soil has the highest percolation rate?
Sandy soil has the highest percolation rate.
5. Which type of soil has the lowest percolation rate?
Clayey soil has the lowest percolation rate.
6. What is weathering?
The process of breakdown of rocks into small particles by the action of water and wind is called weathering.
7. What is soil profile?
A vertical section showing different layers of the soil is called soil profile.
8. What is percolation?
Downward movement of water through the soil is called percolation.
9. Which type of soil is best for growing paddy?
Clayey soil is best for growing paddy because it has good water retention capacity.
10. Which type of soil is suitable for growing lentils?
Loamy soil is suitable for growing lentils because it can drain water easily.
11. What is silt?
Silt is granular material of size between sand and clay. Silt occurs as a deposit in river beds.
12. Which soil is best for making pots and statues?
Clayey soil is best for making pots and statues.
13. What is soil erosion?
The removal of topsoil by the agents like strong wind, water is called soil erosion.

2 MARKS QUESTIONS

14. Why is sandy soil well aerated?
Sand particles are quite large. They cannot fit closely together. So there are large spaces between them. These spaces are filled with air. That's why sandy soil is well aerated.

15. Why sandy soil cannot hold much water?

Sand particles are quite large. They cannot fit closely together. So there are large spaces between them. Water can drain quickly through these spaces. That's why sandy soil is dry and cannot hold much water.

16. Why clayey soil has little air?

Clay particles are small in size, so they are packed tightly and hence have small spaces between them. Because of this, very little air can be trapped in these spaces.

17. Why clayey soil can hold much water?

Clay particles are small in size, so they are packed tightly and hence have small spaces between them. Water drains out very slowly through these small spaces. That's why clayey soil can hold much water.

18. Which type of soil is suitable for growing cereals like wheat and gram?

Clayey and loamy soils are both suitable for growing cereals like wheat and gram because these soils are good at retaining water and are rich in humus.

19. Why is the horse dung mixed in the soil while making surahi and matka?

Horse dung is mixed in the soil while making surahi and matka because horse dung helps to open up the pores in the soil. So that water could percolate out of the matkas and surahis, evaporate and cools the water inside.

20. What do you mean by the term "moisture in soil"?

Quantity of water hold by the soil is called moisture in soil. The capacity of a soil to hold water is important for various crops.

21. Why does the air above the land shimmer on a hot summer day?

On a hot summer day, the vapour coming out of the soil reflects the sunlight and the air above the soil seems to shimmer.

22. Name the factors which affect soil profile.

Soil profile is affected by wind, rainfall, temperature, light and humidity.

23. What is percolation rate?

The rate at which water is passed through the soil is called percolation rate. Its unit is ml/min.

$$\text{Percolation rate} = \text{amount of water} \div \text{percolation time}$$

24. Why polythene bags should be banned?

Polythene bags should be banned because they pollute the soil. They also kill the organisms living in the soil.

25. What are the causes of soil erosion?

Causes of soil erosion are –

- Overgrazing
- Deforestation
- Excessive ploughing of fields

3 MARKS QUESTIONS

26. Enlist some uses of soil.

- Soil supports the growth of plants by holding the roots firmly and supplying water and minerals.
- Soil is home for many organisms like insects, earthworms and bacteria.
- Soil is essential for agriculture.
- Soil is used in making bricks.
- The microorganisms living in soil help in recycling nutrients from dead plants and animals.

27. Explain different layers of the soil.

Soil is made up of different layers. The different layers of the soil are also called horizons.

- **A-horizon** – The top most layer of the soil is called A – horizon or top soil.
 - It is rich in humus and minerals.
 - It is soft, porous and can retain more water.
 - This layer provides shelter for many living organisms and the roots of small plants are embedded entirely in the top soil.
- **B-horizon** – It lies just below the top soil.
 - It has a lesser amount of humus but more of minerals.
 - It is generally harder and more compact than top soil.
- **C-horizon**–It lies just below the B – horizon.
 - It is made up of small lumps of rocks with cracks and crevices.
- **Bedrock** – It is hard and difficult to dig with a spade.

28. Explain the different types of soil.

There are three types of soil

- Sandy soil –this soil contains greater proportion of big particles (sand particles). Sandy soil is well aerated and cannot hold much water.
- Clayey soil–this soil contains greater proportion of fine particles (clay particles). Very little air can be trapped between the particles of clayey soil and it can hold much water.
- Loamy soil – this soil contains equal amount of large and small particles. It contains sand, silt and clay in right proportion. It is the most fertile soil.

29. Which soil is considered as the best soil for growing plants?

Loamy soil is considered as the best soil for growing plants because –

- It has the right water holding capacity for the growth of plants.
- It contains humus.
- It can hold sufficient air for the growth of plants.

