# St. Andrews Scots Sr. Sec. School

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## Session: 2023-2024

**Class : VII** **Subject : Social Science** **Topic : Geography** **Chapter 3 ( Water )**

## Introduction

- The process by which water (or any liquid) changes into water vapour (or gas) is known as evaporation.
- When the temperature of saturated air falls, the air is no longer able to hold all the water vapour it is carrying. The excess vapour then changes into tiny droplets of water. This process is called condensation.
- The falling of condensed water vapour is called precipitation. Rainfall is the most common form of precipitation.
- A fog is a very dense cloud of minute water droplets. A mist is similar to a fog but is less dense, as the droplets formed are larger than those of a fog.
- Dew deposited as tiny crystals of ice is known as frost.It is formed in very cold weather at night.
- There are three types of rainfall depending upon how air is lifted into the atmosphere – relief rainfall, convectional rainfall and frontal, or cyclonic, rainfall.
- When the air contains as much water vapour as it can hold at a given temperature, it is said to be saturated.
- Water containing a large amount of dissolved salts is called saline water. The water of oceans and seas is saline.Water that contains very little dissolved salts is called fresh water.About three per cent of the earth's water is fresh water.
- The level of water in a sea or ocean rises and falls alternately at regular intervals every day. These changes in the level of sea water are called tides.
- The harbour of London not freeze even during winter due to effect of the tides.Since saline waters of the sea freeze at a lower temperature than river water does, the sea water rushing in during high tide prevents harbours from freezing.
- Ocean currents modify the climate of coastal regions by influencing the temperature and the rainfall in these areas. Cold currents make a place colder than other places on the same latitude. Warm currents make a place somewhat warmer.
- Ocean currents also influence rainfall. Winds passing over warm currents pick up moisture and cause heavy rainfall.

# Questions and Answers

## B. Answer the following questions in not more than 20 words.

**1. Define humidity**

**Ans.** The amount of water vapour present in the atmosphere is known as humidity.

**2. When is air said to be saturated?**

**Ans.** When the air contains as much water vapour as it can hold at a given temperature, it is said to be saturated. Warm air can hold more water vapour than cold air can.

**3. What is meant by water cycle?**

**Ans.** The water that evaporates goes into the atmosphere as water vapour. Some of this water vapour condenses to form clouds, and ultimately comes back to the earth's surface as precipitation. The cycle of evaporation, condensation and precipitation goes on all the time, and is known as the water cycle.

**4. What are the three main types of rainfall?**

**Ans.** There are three types of rainfall depending upon how air is lifted into the atmosphere :–

(a) Relief rainfall,

(b) Convectional rainfall and

(c) Frontal, or cyclonic, rainfall.

**5. In which general directions do ocean currents move in the Northern and Southern hemispheres?**

**Ans.** Generally, ocean currents move clockwise in the Northern Hemisphere and anticlockwise in the Southern Hemisphere.

## C. Answer the following questions in not more than 40 words.

**1. How does humidity vary from place to place and from time to time?**

**Ans.** Humidity varies from place to place and from time to time in the following manner :-

- Lesser over land than over oceans
- Greater over hot regions than over cold regions
- Increases in summer and decreases in winter
- Decreases higher in the atmosphere

**2. Why is frontal rainfall common in the subpolar low-pressure belts?**

**Ans**. Frontal rainfall is common in the subpolar low-pressure belts since here, cyclones occur when the warm westerlies are forced to rise over the cold polar air.

**3. What do you understand by saline water and fresh water?**

**Ans. (i)** Water containing a large amount of dissolved salts is called saline water. The water of oceans and seas is saline.

**(ii)** Water that contains very little dissolved salts is called fresh water. About three per cent of the earth's water is fresh water.

**4. What are tides and why do they occur?**

**Ans. (i)** The level of water in a sea or ocean rises and falls alternately at regular intervals every day. These changes in the level of sea water are called tides.

(ii) Tides are caused by the gravitational pull of the moon and the sun on the earth.

(iii) The attraction of the moon is stronger because the moon is much closer to the earth than the sun is.

. (iv) As a result, water piles up in certain regions, producing high tides. In other regions, the water recedes, producing low tides.

**5. Why does the harbour of London not freeze during winter?**

**Ans.** The harbour of London not freeze even during winter due to effect of the tides. Since saline waters of the sea freeze at a lower temperature than river water does, the sea water rushing in during high tide prevents harbours from freezing.

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## D. Answer the following questions in not more than 100 words.

**1. What is condensation? How are clouds formed?**

**Ans.** (i) When the temperature of saturated air falls, the air is no longer able to hold all the water vapour it is carrying. The excess vapour then changes into tiny droplets of water. This process is called condensation.

(ii) Formation of clouds :-

(a) When warm, moist air rises upwards, it gets cooled. Ultimately, it gets saturated.

(b) When its temperature falls further, some of the water vapour in it condenses around dust particles and forms minute droplets of water.

(c) If the temperature is low enough, the vapour may condense into tiny crystals of ice.

(d) These droplets or crystals are so light that they float in the air, carried by air currents. Visible masses of floating water droplets or ice crystals are called clouds.

**2. Define precipitation. Explain how it occurs.**

**Ans.** (i) The falling of condensed water vapour is called precipitation.

(ii) Clouds have millions of tiny water droplets. Some of these droplets fall very slowly, while some are carried up by air currents.

(iii) The moving droplets bump into each other and stick together to form larger droplets. In this

way, the droplets grow in size until they are too heavy to float.

(iv) Then they fall as rain. Like water droplets, ice crystals present in clouds may also grow in size, become heavy and fall as flakes of snow.

**3. What is a tsunami? What caused killer tsunamis in the Indian Ocean in December 2004? Which regions were the worst affected? Why did so many people die?**

**Ans**. (i) A tsunami is a very long wave caused by a submarine or coastal earthquake, landslide or volcanic eruption.

(ii) As it nears the coast, it builds up in height and crashes onto the shore, causing enormous destruction. The tsunami in the Indian Ocean on December 26, 2004 was caused by a powerful earthquake which lasted ten minutes. It raised a part of the ocean floor, causing tsunamis that killed more than 275,000 people.

(iii) The regions worst affected were the coasts of Indonesia, South India, Sri Lanka and Thailand.

(iv) So many people died since there were no tsunami warning systems. Victims were caught unprepared.

(v) They could not recognise warning signs such as the temporary receding of the ocean from the shore and frothing bubbles near the water's edge.

**4. How do ocean currents modify the climate of coastal regions? Give one example.**

**Ans**. (i) Ocean currents modify the climate of coastal regions by influencing the temperature and the rainfall in these areas.

(ii) Cold currents make a place colder than other places on the same latitude. Warm currents make a place somewhat warmer. For example, the ports of Norway located within the Arctic Circle remain free of ice in winter due to the warming influence of the North Atlantic Drift. Yet, ports on the Labrador coast of North Amercia, lying at much lower latitudes, freeze over in winter under the influence of the cold Labrador Current.

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