

As you have read in the first chapter, the earth is the only planet which has life. Human beings can live here because the life sustaining elements of land, water and air are present on the earth.

The surface of the earth is a complex zone in which three main components of the environment meet, overlap and interact. The solid portion of the earth on which we live is called the **Lithosphere**. The gaseous layers that surround the earth, is the **Atmosphere**, where oxygen, nitrogen, carbon dioxide and other gases are found. Water covers a very big area of the earth's surface and this area is called the **Hydrosphere**. The Hydrosphere comprises water in all its forms, that is, ice, water and water vapour.

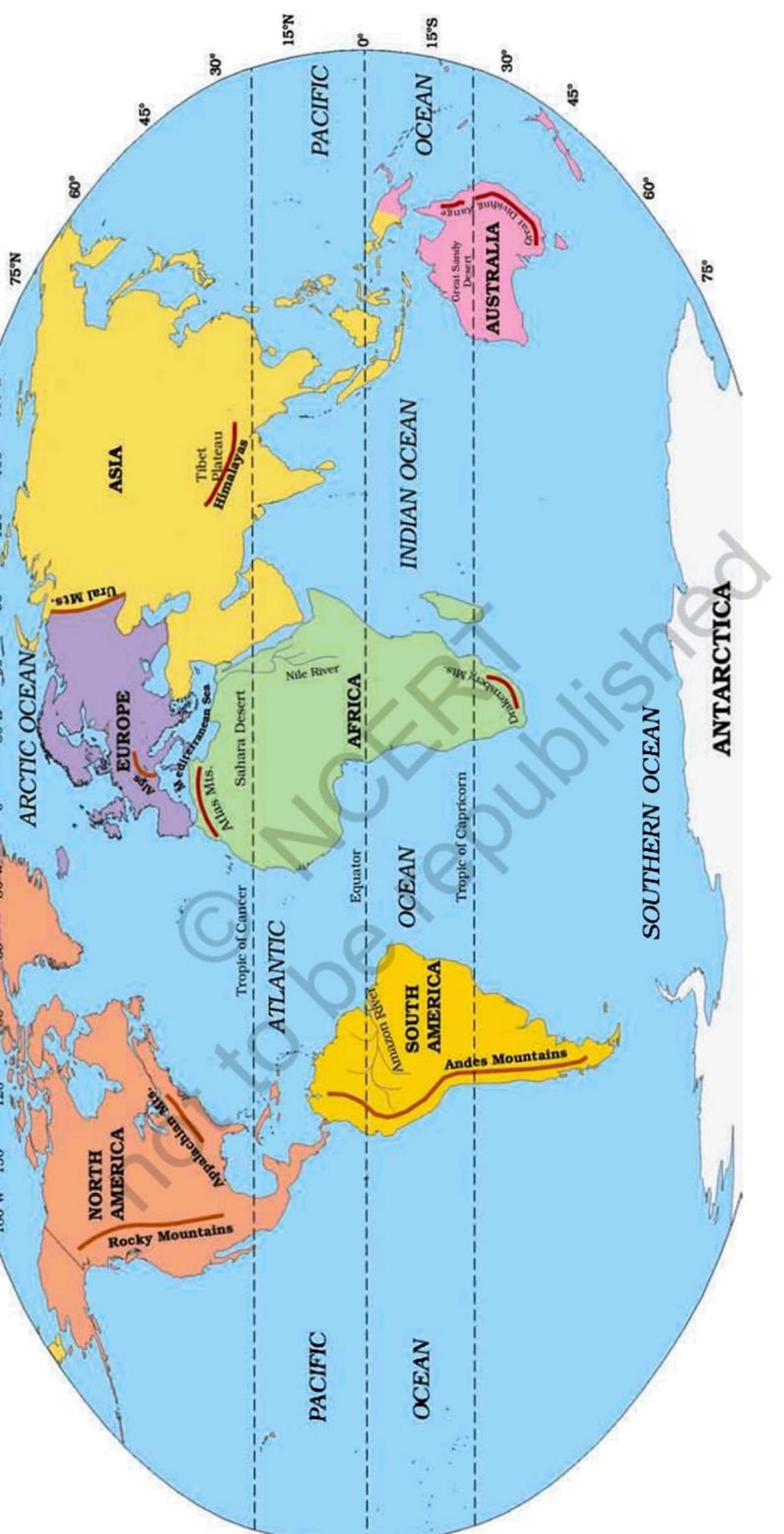
The **Biosphere** is the narrow zone where we find land, water and air together, which contains all forms of life.

## LITHOSPHERE

The solid portion of the earth is called the *Lithosphere*. It comprises the rocks of the earth's crust and the thin layers of soil that contain nutrient elements which sustain organisms.

There are two main divisions of the earth's surface. The large landmasses are known as the **continents** and the huge water bodies are called the **ocean basins**. All the oceans of the world are connected with one another. Look at the map of the world (Figure 5.1). Are all the land masses connected with one another?

The level of seawater remains the same everywhere. Elevation of land is measured from the level of the sea, which is taken as zero.



The highest mountain peak Mt. Everest is 8,848 metres above the sea level. The greatest depth of 11,022 metres is recorded at Mariana Trench in the Pacific Ocean. Could you imagine that depth of sea is much more than the highest point?

## Continents

There are seven major continents. These are separated by large water bodies. These continents are – Asia, Europe, Africa, North America, South America, Australia and Antarctica. Look at the map of the world (Figure 5.1) and notice that the greater part of the land mass lies in the Northern Hemisphere.

**Asia** is the largest continent. It covers about one-third of the total land area of the earth. The continent lies in the Eastern Hemisphere. The Tropic of Cancer passes through this continent. Asia is separated from Europe by the Ural mountains on the west (Figure 5.1). The combined landmass of Europe and Asia is called the *Eurasia* (Europe + Asia).

**Europe** is much smaller than Asia. The continent lies to the west of Asia. The Arctic Circle passes through it. It is bound by water bodies on three sides. Look at the map of the world and locate it.

**Africa** is the second largest continent after Asia. The Equator or 0° latitude runs almost through the middle of the continent. A large part of Africa lies in the Northern Hemisphere. Look at the Figure 5.1; you will find that it is the only continent through which the Tropic of Cancer, the Equator and the Tropic of Capricorn pass.

The Sahara Desert, the world's largest hot desert, is located in Africa. The continent is bound on all sides by oceans and seas. Look at the world map (Figure 5.1). You will notice that the world's longest river the Nile, flows through Africa. Notice where the Equator, the Tropic of Cancer and the Tropic of Capricorn pass in the map of Africa.

**North America** is the third largest continent of the world. It is linked to South America by a very narrow strip of land called the Isthmus of Panama. The continent lies completely in the Northern and Western Hemisphere. Three oceans surround this continent. Can you name these oceans?

**South America** lies mostly in the **Southern Hemisphere**. Which two oceans surround it on the east and the west? The **Andes**, world's longest mountain range, runs through its length from north to south (Figure 5.1). South America has the world's largest river, the **Amazon**.

**Australia** is the smallest continent that lies entirely in the **Southern Hemisphere**. It is surrounded on all sides by the oceans and seas. It is called an **island continent**.

**Antarctica**, completely in the **Southern Hemisphere**, is a huge continent. The **South Pole** lies almost at the centre of this continent. As it is located in the **South Polar Region**, it is permanently covered with thick ice sheets. **There are no permanent human settlements**. Many countries have research stations in Antarctica. **India also has research stations there. These are named as Maitri and Dakshin Gangotri.**

### HYDROSPHERE

The earth is called the *blue planet*. More than 71 per cent of the earth is covered with water and 29 per cent is with land. Hydrosphere consists of water in all its forms. As running water in oceans and rivers and in lakes, ice in glaciers, underground water and the water vapour in atmosphere, all comprise the hydrosphere.

More than 97% of the Earth's water is found in the oceans and is too salty for human use. A large proportion of the rest of the water is in the form of icesheets and glaciers or under the ground and a small percentage is available as fresh water for human use.



Figure 5.2 : Isthmus and Strait

