

Revision Notes
Chapter – 17
Major Domains of the Earth

- The earth is the only planet which has life. Human beings can live here because the life supporting elements of land, water and air are present on the earth. These are called Domains.
- The earth has four components-Lithosphere, Atmosphere, Hydrosphere and Biosphere.

• **Lithosphere:**

- (i) The solid portion of the earth is called the lithosphere.
- (ii) There are two divisions of the earth's surface. The large land masses are called continents and the huge water bodies are called the ocean basins.
- (iii) All the oceans of the world are connected with one another. The level of sea water remains the same everywhere in the world. Elevation of land is measured from the level of the sea water which is taken as zero.
- (iii) The highest mountain peak Mt. Everest is 8,848 metres above the sea level, while the deepest point of the earth is at Mariana Trench in the Pacific ocean with the depth of 11,022 metres.
- (iv) There are seven main continents-Asia, Europe, Africa, North America, South America, Australia and Antarctica.

(a) Asia:

It is the largest continent and covers about one-third of the total area of the world.

Asia lies in the Eastern hemisphere and is separated from Europe by the Ural mountains on the West part of it.

The Tropic of Cancer passes through this continent.

(b) Europe:

This continent lies to the West of Asia and is much smaller in size than Asia.

The Arctic Circle passes through it and is bounded by the water bodies on three sides.

(c) Africa:

It is the second largest continent after Asia.

It is the only continent through which the tropic of Cancer, the Equator and the tropic of Capricorn pass.

A large part of Africa lies in the Northern hemisphere. The country is bound on all the sides by oceans and seas.

(d) North America:

It is the third largest continent of the world.

The continent lies totally in the Northern and Western hemisphere and is surrounded by three oceans.

(e) South America:

It lies mostly in the Southern hemisphere.

The world's longest mountain range 'Andes' runs from North to South through its entire length. This continent has the world's largest river named 'Amazon'.

(f) Australia:

It lies completely in the Southern hemisphere and is the smallest continent.

It is called an island continent, and is surrounded on all sides by the oceans and seas.

(g) Antarctica:

It is a huge continent, completely lies in the Southern hemisphere. The South Pole lies almost at the centre of the continent.

The continent remains permanently ice-covered due to its position in the South Polar region. Many countries have established their research stations in Antarctica. India also has established research stations in Antarctica, i.e. Maitri and Dakshin Gangotri.

• **Hydrosphere:**

(i) The earth is a blue planet.

(ii) More than 71% of the earth is covered with water.

(iii) Hydrosphere consists of water in all its forms. It includes the water in rivers, lakes,

oceans and glaciers.

(iv) More than 97% of the earth's surface water is found in the oceans and is too salty for human use.

(v) So only a small percentage is available as fresh water for human consumption which is present in the form of icesheets and glaciers or under ground water.

• **Oceans:**

(i) Oceans are huge water-bodies and major part of the hydrosphere.

(ii) The three chief movements of ocean waters are the waves, the tides and ocean currents.

(iii) Some major oceans in the world are the Pacific Ocean, the Atlantic Ocean, the Indian Ocean and the Arctic Ocean.

(iv) Pacific Ocean is the largest ocean spread over one-third of the earth. The shape of Pacific Ocean is almost circular.

(v) Atlantic Ocean is the second largest ocean and is "S" shaped with highly indented coastline which provides ideal location for natural harbours and ports.

(vi) The Indian ocean is the only ocean that is named after a country i.e. India. The shape of the ocean is triangular.

(vii) The Southern Ocean encircles the Antarctica continent and extends Northward to 60° South latitude.

(viii) The Arctic Ocean is located within the Arctic Circle and surrounds the North Pole.

• **Atmosphere:**

(i) The envelope of air surrounding the earth is called the atmosphere.

(ii) It provides us with the air we breathe and protects us from the harmful effects of the sun's rays.

(iii) The atmosphere extends upto a height of about 1,600 kms.

(iv) The atmosphere is divided into five layers based on composition, temperature and other properties. These layers are called the troposphere, the stratosphere, the mesosphere, the thermosphere and the exosphere.

(v) The atmosphere has 78% nitrogen, 21% oxygen, and other gases like carbon and argon are 1% by volume.

(vi) Oxygen is important for breathing, nitrogen for growth of living beings while carbon dioxide is important for absorption of heat radiated by earth to keep it warm and for

respiration of plants.

(vii) The density of the atmosphere is maximum at sea level and decreases as going up.

• **Biosphere:**

(i) It is a narrow zone of contact between the land, water and air, where life exists.

(ii) All the living organisms including human beings are linked to each other and are dependent upon the biosphere for survival.

(iii) The living organisms in biosphere can be broadly divided into the plant kingdom and the animal kingdom.

(iv) The three domains of the earth are interlinked with each other and affect each other.

Global Warming

(i) Air is also polluted by emission from industries, thermal power plants and vehicles.

Carbon dioxide (CO₂) increases, it leads to increase in global temperatures. This is termed as global warming.

(ii) So, it is essential to limit the over-consumption of resources of the earth to maintain the balance of nature between the domains of the lithosphere, the atmosphere and the hydrosphere.