Temperature

EXERCISE [PAGES 30 - 31]

Exercise | Q (A)(1) | Page 30

Where am I?

The isotherm 0°C runs in my surroundings.

Solution: The isotherm 0°C runs in my surroundings. **- Frigid zone**

Exercise | Q (A)(2) | Page 31

Where am I?

The mean annual temperature is 25°C around me.

Solution: The mean annual temperature is 25°C around me. **- Torrid zone**

Exercise | Q (A)(3) | Page 30

Where am I?

The mean annual temperature around me is 10°C.

Solution: The mean annual temperature around me is 10°C. **- Temperate zone**

Exercise | Q (B)(1) | Page 30

Who am I?

I connect places of equal temperature.

Solution: I connect places of equal temperature. **- Isotherm**

Exercise | Q (B)(2) | Page 30

Who am I?

I am useful for measuring the correct temperature.

Solution: I am useful for measuring the correct temperature. - Thermometer

Exercise | Q (B)(3) | Page 30

Who am I?

I get heated due to the land or water near me

Solution: I get heated due to the land or water near me **- Air**

Exercise | Q (B)(4) | Page 30

Who am I?

Land and water get heated due to me.

Solution: Land and water get heated due to me. **- Sunrays**

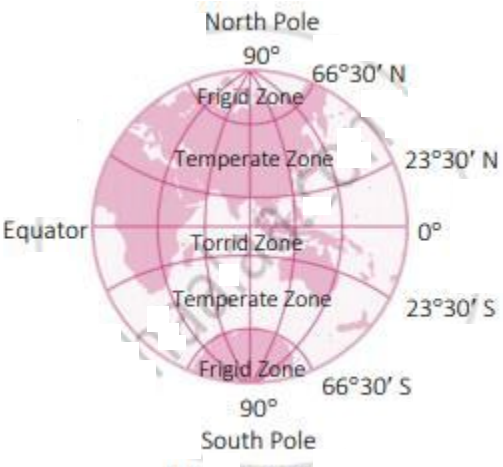
Exercise | Q C . (1) | Page 30

Answer the following.

Explain with a diagram, the effect of the spherical shape of the earth on the temperature at different latitudes.

Solution:

1. Sunrays travel in a straight line and are parallel to each other.
2. Due to the spherical shape of the earth and the resultant curvature of the surface of the earth, the sunrays occupy larger or lesser area in different parts of earth.
3. This leads to unequal distribution of heat received from sun, which results in decreasing temperature from the equator to the North and the South poles.
4. Based on this distribution of temperature, the earth is divided into three zones: a. Torrid zone (between 0°and 23°30', North and South), b. Temperate zone (between 23°30' and 66°30' North and South) and c. Frigid zone (between 66°30' and 90°, North and South).



Thermal Zones

Exercise | Q (C)(2) | Page 30

What is the relation between the latitudinal extent and temperature of a region?

Solution:

1. As we move away from 0°latitude, i.e. from equator towards north and south pole, the temperature decreases.

2. The region between 0°to 23°30' North and South, i.e. Torrid zone receives perpendicular sunrays, thus the temperature of this region is high.
3. The region between 23°30' to 66°30' North and South, i.e. Temperate zone receives slant sunrays, thus the temperature of this region is comparatively low.
4. The region between 66°30' to 90°North and South, i.e. Frigid zone receives extremely slanting sunrays, thus the temperature of this region is very low.

Exercise | Q (C)(3) | Page 30

What makes the isotherms run zigzag over continental areas?

Solution:

1. The air over the continental areas gets heated and cools faster than that over the oceans.
2. The temperature in the continental areas changes faster as compared to the temperature over the water bodies.
3. Due to this, the isotherm line deviates to a large extent while moving from the oceans to the land.

Hence, the isotherms run zigzag over the continental areas.