



Important latitudes on the globe

Location of a place on the Earth's surface

Q/A

1. Name the important parallels of latitudes on the globe with diagram.

A:- Besides the equator and the two poles, the other important lines of latitude are the —

1. The parallel $23\frac{1}{2}^{\circ}$ N (North) is called the Tropic of Cancer.
2. The parallel of $66\frac{1}{2}^{\circ}$ N (North) is called the Arctic circle.
3. The parallel $23\frac{1}{2}^{\circ}$ S (South) is called the Tropic of Capricorn.
4. The parallel $66\frac{1}{2}^{\circ}$ S (South) is called the Antarctic circle.

2. Write short notes on —

(a) The poles — The two end ~~po~~ points on the Earth's surface at the top and at the bottom of the axis are called the poles of the Earth. That pole which points or end toward the pole star is called the North pole and the bottom end points is called the South Pole.

(b) The equator — If an east-west imaginary ~~at~~ circle is drawn through the surface of the earth at an equal distance or midway from

both the poles (north pole and south pole), it will divide the Earth's surface into two almost equal halves. The imaginary line is called the Equator. It is 0° .

(c) Hemispheres - The word hemisphere means half of a sphere i.e., the Earth. The equator divides the earth into two equal hemispheres. The northern half of the earth from the equator is known as the Northern Hemisphere and the southern half is known as Southern Hemisphere. The eastern part of the prime meridian is called the eastern hemisphere and the western part of the prime meridian is called the western hemisphere.

(d) axis - An imaginary straight line joining the two poles (North and South Pole) passing through the centre of the Earth is called Earth's axis. This axis is inclined to the plane of the earth's orbit at an angle of $66\frac{1}{2}^\circ$.

(e) Longitude - The imaginary lines drawn on the map from North Pole to South Pole are called longitudes. They are semicircles. There are 360 longitudes.

(f) Latitude - The imaginary lines drawn on the map from West to East parallel to the equator are

~~both the poles (north pole and south pole)~~
called latitude. They are circles. There are 180 latitudes.

(g) Great Circle - A great circle is a circle drawn on the Earth in such a way that the centre of the circle is the centre of the Earth. The radius of the great circle is the same as the radius of the Earth. A great circle is the largest possible circle that can be drawn on the surface of a sphere.

(h) Prime Meridian - The longitude that passes through Greenwich, near London, is called the Prime Meridian. Its position is 0° .

3) Explain the characteristics of the Meridian of longitude.

Ans: (i) Longitude is the angular distance of a place east or west of the Prime Meridian. (ii) There are 360 meridians of longitude. (iii) The meridians are not parallel. They converge at the two poles. (iv) The meridians are semicircles. (v) All the meridians are of equal length. (vi) The distance between any two meridians varies they get closer from the equator to the poles. (vii) All the meridians run in a north-south direction. (viii) All places on the same meridians have sunrise and sunset.

noon, at the same times (ix) Each meridian cuts the equator at right angle.

4) Explain the characteristics of the latitude.

A: (i) All latitudes are full circles (ii) The parallels of latitude run in the east west direction. (iii) Parallels are always parallel to each other (iv) Among the parallels the equator is the largest and known as Great Circle. (v) As the latitude increases the circumference of the parallel decreases. (vi) Being parallel to each other they never intersect one another. (vii) All the parallels except North Pole and South Pole intersect meridians at right angles. (viii) The place lying on the same parallel receives almost the same heat but local time differs place to place. (ix) The maximum value of parallel is 90° . (x) The total number of the parallels of latitude including equator is $89 + 1 + 89 = 179$.

5) Differences between —

a) Latitude and Longitude —

Latitude

1. Latitude is the angular distance of a place North or South of the Equator.
2. The latitude value — increases in North — South directions from the Equator.
3. Its value ranges between 0° to 90° N, 0° to 90° S.

Longitude

1. Longitude is the angular distance of a place East or West of Prime Meridian.
2. The longitude value increases in East — West directions from Meridian.
3. Its value ranges between 0° to 180° E, 0° to 180° W.

b) Great circle and Small Circle. —

Great Circle

1. A great circle is a circle which bisects the Earth into two equal hemispheres.
2. It passes through the centre of the Earth.

Small circle

1. A small circle is a circle which does not bisect the Earth into two equal hemispheres.
2. It does not pass through the centre of the Earth.

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| 3. It has circumference of $2\pi R$ | It has a circumference less than $2\pi R$ |
| 4. All meridians and Equator are great circles. | All parallels except Equator are small circles |
| 5. Ships follow great circles as it is the shortest distance between two points. | Ships do not follow small circles routes. |

c) Equator and Prime Meridian. —

| <u>Equator</u> | <u>Prime Meridian</u> |
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| 1. Equator is a circle around the Earth bisecting it into two equal parts. | The prime meridian is a semicircle joining north pole and south pole. |
| 2. It is 0° latitude. | It is 0° longitude |
| 3. It passes through the centre of the Earth. | It passes through the Greenwich (London). |
| 4. It divides the Earth into northern and southern hemisphere | It divides the Earth into eastern and western hemisphere. |

d) Tropic of Cancer and Tropic of Capricorn —

Tropic of Cancer

Tropic of Capricorn.

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| 1. $23\frac{1}{2}^{\circ}$ N Latitude is known as Tropic of Cancer | $23\frac{1}{2}^{\circ}$ S longitude is known as Tropic of Capricorn. |
| 2. It lies in the northern hemisphere. | It lies in the Southern hemisphere. |
| 3. The Sun shines vertical on it on 21st June. | The Sun shines vertical on it on 22nd December. |
| 4. It is the northern limit of tropical region | It is the southern limit of tropical region |

e) Arctic Circle and Antarctic Circle —

Arctic Circle

Antarctic Circle

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| 1. $66\frac{1}{2}^{\circ}$ N parallel is known as Arctic Circle | $66\frac{1}{2}^{\circ}$ S parallel parallel is known as Antarctic circle. |
| 2. Beyond this lies the northern polar region | Beyond this lies the southern polar region. |

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| 3. Beyond Arctic Circle the length of day is more than 24 hours in summer | Beyond Antarctic circle the length of night is more than 24 hours in winter |
| 4. Arctic Ocean lies in north of it | Antarctic ocean lies in south of it |