

Grade VI

Lesson 2. Latitudes and Longitudes

Objective Type Questions

I. Multiple Choice Questions

1. The value of the prime meridian is
 a. 90° b. 0° c. 60° d. None of these
2. The Frigid Zone lies near
 a. the poles b. the Equator c. the Tropic of cancer d. none of these
3. The total number of longitudes are
 a. 360 b. 180 c. 90 d. none of these
4. The Tropic of Cancer is located at _____
 a. $23\frac{1}{2}^\circ$ S b. $23\frac{1}{2}^\circ$ N c. $66\frac{1}{2}^\circ$ S d. none of these
5. The total number of longitudes are _____
 a. 360° b. 90° c. 66° d. none of these
6. The frigid zones are located at the degree of _____
 a. $66\frac{1}{2}^\circ$ N & S b. $23\frac{1}{2}^\circ$ N & S c. 90° N & S d. none of these
7. The temperate zone is located in _____
 a. Northern Hemisphere b. Southern Hemisphere
 c. Eastern Hemisphere d. none of these
8. The lines of latitude are _____
 a. Vertical b. horizontal c. slanting d. none of these
9. Equator is an
 a. imaginary line b. real line c. both of these d. none of these
10. Equator is located at _____
 a. 0° b. 4° c. 1° d. none of these

1. b	2. a	3. a	4. b	5. a
6. c	7. a	8. b	9. a	10. a

II. Multiple Choice Questions

1. The globe and the earth are different in
 a. Shape b. Size c. continents and oceans d. None of these

2. The axis is parallel to the
 - a. equator
 - b. Prime Meridian
 - c. latitudes
 - d. all of these
3. The Tropic of Cancer is located at
 - a. $23\frac{1}{2}^{\circ}$ N
 - b. $66\frac{1}{2}^{\circ}$ N
 - c. $23\frac{1}{2}^{\circ}$ S
 - d. $66\frac{1}{2}^{\circ}$ S
4. The heat zone with the coldest climate is the
 - a. Torrid zone
 - b. Northern Temperate zone
 - c. The Frigid Zones
 - d. either of the Temperate Zones.
5. From the westernmost point to the easternmost point, the local times of India extend over a time difference of
 - a. no difference
 - b. 30 minutes
 - c. 1 hour
 - d. over 1 hour.
6. The time difference between Greenwich and India is
 - a. no difference
 - b. 3 hours
 - c. 5 hours 30 minute
 - d. 12 hours 30 minutes

1. b	2. b	3. a	4. c	5. d	6. c
------	------	------	------	------	------

III. Multiple Choice Questions

1. What is a globe?
 - a. Earth
 - b. True model of the earth
 - c. both a and b
 - d. None of these
2. Which of the following are shown on the globe in their true size?
 - a. Countries
 - b. Continents
 - c. Oceans
 - d. All of these
3. What is called a needle fixed through the globe in a tilted manner?
 - a. Orbit
 - b. Axis
 - c. Latitude
 - d. Longitude
4. What divided the earth into two equal parts? The northern hemisphere and the southern hemisphere?
 - a. Tropic of Capricorn
 - b. Tropic of Cancer
 - c. Equator
 - d. Article Circle
5. Name one of the following parallels of latitudes as Tropic of Cancer.
 - a. 0°
 - b. $23^{\circ} 30' S$
 - c. $23^{\circ} 30' N$
 - d. $66^{\circ} 30' N$
6. Between which parallels of latitudes is the Torrid Zone situated?
 - a. Tropic of Cancer and Tropic of Capricorn
 - b. Tropic of Cancer and Article circle
 - c. Tropic of Capricorn and Antarctic Circle
 - d. None of these
7. Which of the following zone is situated between $66^{\circ} 30' S$ and poles?
 - a. Torrid Zone
 - b. Temperate Zone
 - c. Frigid Zone
 - d. All of these
8. Which of the following is called the Prime Meridian?
 - a. $23^{\circ} 30' N$
 - b. $23^{\circ} 30' S$
 - c. $82^{\circ} 30' E$
 - d. 0° longitude

8. The value of Prime Meridian is _____ longitude.
9. _____ is located at $66\frac{1}{2}^{\circ}$ north of the _____
10. Prime Meridian is 180° eastward as well as _____ westward.

1. $23\frac{1}{2}^{\circ}$	2. $82^{\circ} 30'$	3. Prime Meridian	4. Poles	5. Northern
6. North pole and south pole	7. Equator	8. 0°	9. Arctic Circle, Equator	10. 180°

II. Fill in the Blanks

1. Russia extends over _____ time zones.
2. As we move away from the equator, the sizes of the latitudes _____
3. The poles fall in the _____
4. To locate a point, we need to know the latitude, as well as _____
5. The British Royal observatory is located in _____, UK.
6. A hemisphere is one _____ of a sphere.
7. Latitudes and longitudes form a _____
8. All places lying on the same _____ have the same time.
9. When it is .30 pm on August 16 in Greenwich, it is _____ (time) on _____ (date) in Chennai.

1. Eleven	2. Decreases	3. Frigid	4. Longitude	5. Greenwich
6. Half	7. Grid	8. Longitude	9. 1 a.m. (time) on August 17	

III. Fill in the Blanks

1. The Tropic of Capricorn is located at _____
2. The standard Meridian of India is _____
3. The 0° Meridian is also known as _____
4. The distance between the longitudes decreases towards _____
5. The article Circle is located in the _____ hemisphere.

1. $23\frac{1}{2}^{\circ}$ South of equator	2. $82\frac{1}{2}^{\circ}$ E	3. Prime Meridian or Greenwich Line	4. Poles	5. Northern
---	------------------------------	-------------------------------------	----------	-------------

I. Match the following

1. Maximum heat	(a) Indian Standard Time
2. Moderate temperature	(b) Frigid Zone
3. Cold Zone	(c) Temperate Zone
4. IST	(d) Torrid Zone

1. d	2. c	3. b	4. a
------	------	------	------

II. Match the following

1. The number of time zones in the whole world	(a) 12
2. The number of time zones in India	(b) 1
3. The number of time zones in Russia	(c) 5
4. Difference between the local times of Greenwich and a place at 180 ° longitude (in hours)	(d) 4
5. Number of minutes by which local times at longitudes at one degree difference, differ	(e) 11
6. Number of points having the same set of latitude and longitude	(f) 24

I. True or False

1. The Tropic of Capricorn is located in Northern Hemisphere.
2. Longitudes are the lines running from North pole to South Pole.
3. India is 5 hours 45 minutes ahead of Greenwich
4. The earth has been divided into 24 time zone of one hour each.
5. GRID is a network of Tropic of Cancer and Tropic of Capricorn.
6. One hour is of 60 minutes.
7. Latitude and longitude is essential in measuring globe.

1. False	2. True	3. False	4. True	5. False	6. True	7. True
----------	---------	----------	---------	----------	---------	---------

II. True or False

1. The axis of the earth is not actually tilted as depicted in a globe.
2. The equator lies at the 0 degree latitude.
3. The Prime Meridian is the 180 degree latitude.
4. More than half of India lies in the Frigid Zone
5. The Tropic of Capricorn does not pass through India.
6. The two Temperate Zones maintain a moderate climate.
7. The time at a place in the east of Greenwich is ahead of that in Greenwich.
8. The earth rotates from west to east.
9. The standard longitude for Indian time is the 64 ° longitude.

1. False	2. True	3. False	4. False	5. True
6. True	7. True	8. True	9. False	

Very Short Answer Type Questions

1. What is the true shape of the earth?

The Earth is a little flattened at North and South poles and its bulge is in the middle.

2. What is a globe?

Globe is a true miniature form of earth. A small model of our big Earth.

3. At what latitude Tropic of Cancer is located?

It is located at 23 1/2° N.

4. What are the three heat zones of the Earth?

The three heat zones of the earth are: **Torrid Zone, Temperate Zone and Frigid Zone**

5. What are parallels of latitude and meridians of longitude?

Parallel of latitude are parallel circle from the equator up to the poles, Meridians of longitude are times of reference running from North Pole to South pole.

6. Why does the Torrid Zone receive maximum amount of heat?

The middle Sun is exactly overhead at least once a year on all the latitudes in between the tropic of Cancer and the Tropic of Capricorn. It , therefore receives maximum heat and is thus called as Torrid Zone.

7. Why is it 5.30 pm in India and 12.00 noon in London?

India is located east of Greenwich at 82° 30' E, i.e., 5 hours and 30 minutes ahead of London. So it is 5.30 pm in India when it is 12 noon in London.

8. What is a axis?

There is a needle fixed through the globe in a tilted manner which is called its axis. The imaginary line passing through the centre of the earth and joining the two poles.

9. What is an equator?

An imaginary line running on the globe divides it into two equal parts. This line is called as Equator.

10. Mention some important parallels of latitude?

- (i) Equator (0°)
- (ii) Tropic of Cancer ($23\frac{1}{2}^\circ N$)
- (iii) Tropic of Capricorn ($23\frac{1}{2}^\circ S$)
- (iv) Arctic Circle ($66\frac{1}{2}^\circ N$)
- (v) Antarctic Circle ($66\frac{1}{2}^\circ S$)

11. Define Torrid Zone.

The mid-day sun is exactly overhead at last once a year on all latitudes in between the Tropic of Cancer and the Tropic of Capricorn. This area is called Torrid Zone and receives maximum heat.

12. What is map?

Representation, on a plane surface, of features of part of the earth's surface drawn to some specific scale.

13. What is Prime Meridian?

It is first meridian, also called 0° longitude, which passes through the Greenwich in England.

Short Answer Type Questions

1. What are parallels of latitude?

- (i) The lines which run horizontally in east-west direction parallel to each other are called parallels of Latitude.
- (ii) These lines are also called Parallels because they never meet each other and run in the same direction without meeting each other and all these lines
- (iii) But they are always unequal in size, as we move towards the poles their length goes on decreasing.

2. What is great circle?

- (i) The largest parallel is the Equator which divides the earth into two equal halves that is Northern Hemisphere and Southern Hemisphere.
- (ii) The Equator is also known as the Great Circle.
- (iii) A great circle is the largest circle which can be drawn on a spherical body which represents the circumference of that sphere and tends to divide it into two equal parts.

3. What are meridians of longitude?

- (i) Lines which run vertically in north-south direction and tend to intersect each other at poles are called Meridians of Longitude.
- (ii) They meet each other at the poles and are equal in size.
- (iii) One thing worth remembering is that, these lines are only drawn on the maps of the world or the globe only for the convenience of locating places and the features of the earth.

4. How are latitude and longitude measured?

- (i) Both the latitudes and longitudes are measured in degrees ($^{\circ}$) because of the fact that they represent the angular distance.
- (ii) Each degree is further divided into sixty minutes ($'$) and each minute into sixty seconds ($''$)
- (iii) We can draw infinite number of latitudes and longitudes on the map but geographers prefer to draw these in the interval of 10 to 15 degrees for the convenience.
- (iv) So in this way, from the Equator till poles we can draw as much as 90 circles of divisions having the difference of one degree each.

5. How do we distribute the geographic features over the earth?

- (i) To understand the distribution of geographic features and locations over the earth's surface, we require some system of accurate location.
- (ii) The features can be represented on the map and a globe with the help of the points of references.
- (iii) The two basic points of references are North Pole and South Pole which form the basis for the grid system.
- (iv) The two sets of lines which intersect each other at the right angle on the face of the earth forms the grid.
- (v) These two sets of lines are known as Parallels of Latitude and Meridians of Longitude which criss-cross in such a way that they make a network at the face of the earth.

6. Why do we need standard time?

- (i) The local time of places which are on different meridian are bound to differ and bound to create confusion and inconvenience.
- (ii) For example, it will be difficult to prepare a time table for trains which cross several longitude.
- (iii) In India for instance there will be difference of about 1 hour and 45 minutes in the local time of Dwarka in Gujarat and Dibrugarh in Assam.
- (iv) Therefore, it is necessary to adopt local time of some central meridian of a county as the standard time for the country.

Long Answer Type Questions

1. How is latitude helpful?

- (i) All parallel circles from the equator up to the Poles are called Parallels of Latitude.
- (ii) The Equator represents the Zero latitude.
- (iii) All Parallels north of the Equator are called north latitude.
- (iv) All parallel south of the Equator are called south latitude.
- (v) It helps in telling us the temperatures of that area.

2. What are the various latitudinal patterns on the earth?

A number of latitudes can be drawn on the face of the globe but in order to have as better visual effect and convenience, geographers draw only seven, which are as follows:

1. Equator (0°)
2. North Pole, (90° North)
3. South Pole, (90° South)
4. Tropic of Cancer, ($23\frac{1}{2}^\circ N$)
5. Tropic of Capricorn, ($23\frac{1}{2}^\circ S$)
6. Arctic Circle, ($66\frac{1}{2}^\circ N$)
7. Antarctic Circle, ($66\frac{1}{2}^\circ S$)

3. Write a short note on the Torrid Zone.

The mid-day sun is exactly over head at least once a year on all latitudes in between the Tropic of Cancer and the Tropic of Capricorn. This area, therefore, receives the maximum heat and is called the 'Torrid Zone'.

4. Write a short note on Frigid Zone.

This zone lies in between $66\frac{1}{2}^\circ$ North latitude (Arctic Circle) and 90° North latitude (North Pole) in both the hemisphere. The angle of sun's rays are slanting and hence lesser heating takes place due to which temperature is always below freezing point (very cold area). This is the only zone where the length of days and nights is Maximum. Or we can say that poles have days and nights of six months each.

5. What is the importance of longitude?

- (i) The importance of longitudes lies in the fact that it facilitates the calculation of the local time of a place very easily.
- (ii) Secondly if one knows the latitudes and longitudes of a place, he can easily locate it either on the map or on a globe without wasting much of time.
For example, if Chennai is located on the 80° est longitude then we can easily make out its location.

6. How does longitude affect time?

- (i) When the Prime Meridian of Greenwich has the sun at the highest point in the sky, all the place along this meridian will have mid-day or noon.
- (ii) As the earth rotates from West to East, those places east of Greenwich will be ahead of Greenwich time and those to the west will be behind it.
- (iii) The earth rotates 360° in about 24 hours, which means 15° an hour or 1° in five minutes.
- (iv) Thus when it is 12 noon at the Greenwich, the time at 15° west of Greenwich the time will be behind Greenwich time by one hour, i.e., when it will be 11. 00 am.
- (v) Similarly at 180° , it will be midnight when it is 12 noon at Greenwich .

7. How is IST Calculated

- (i) In India, for instance, there will be a difference of about 1 hour and 45 minutes in the local times of Dwarka in Gujarat and Dibrugarh in Assam.
- (ii) It is therefore, necessary to adopt the local time of some Central Meridian of a country as the standard time for the country.
- (iii) In India, the longitude of $82\frac{1}{2}^\circ E$ ($82^\circ 30' E$) is located as the standard meridian
- (iv) The local time at this meridian is taken as the standard time for the whole country.
- (v) It is known as the Indian Standard Time (IST).