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16/7/21

Time Calculation

Example

Exercises

1. Fill in the blanks

1. The equator is the 0° latitude, and a great circle.

2. The Antarctic Circle is found in the southern hemisphere.

3. The ~~Temperature~~ Temperature Zone falling between $23\frac{1}{2}^\circ$ N and $23\frac{1}{2}^\circ$ S is called the Torrid zone.

4. The distance between the lines of longitude decreases towards the poles.

5. The standard meridian of India ~~82°E~~ $82^\circ 30'E$.

11. True or false?

1. A latitude is the angular distance from the equator to the poles. True
2. All lines of latitude are of the same length. False
3. The north temperate ~~zone~~ zone lies to the north of the Arctic circle. False.
4. The 0° longitude passes through the British Royal observatory. True.
5. A country can have more than one standard time. ~~False~~. True

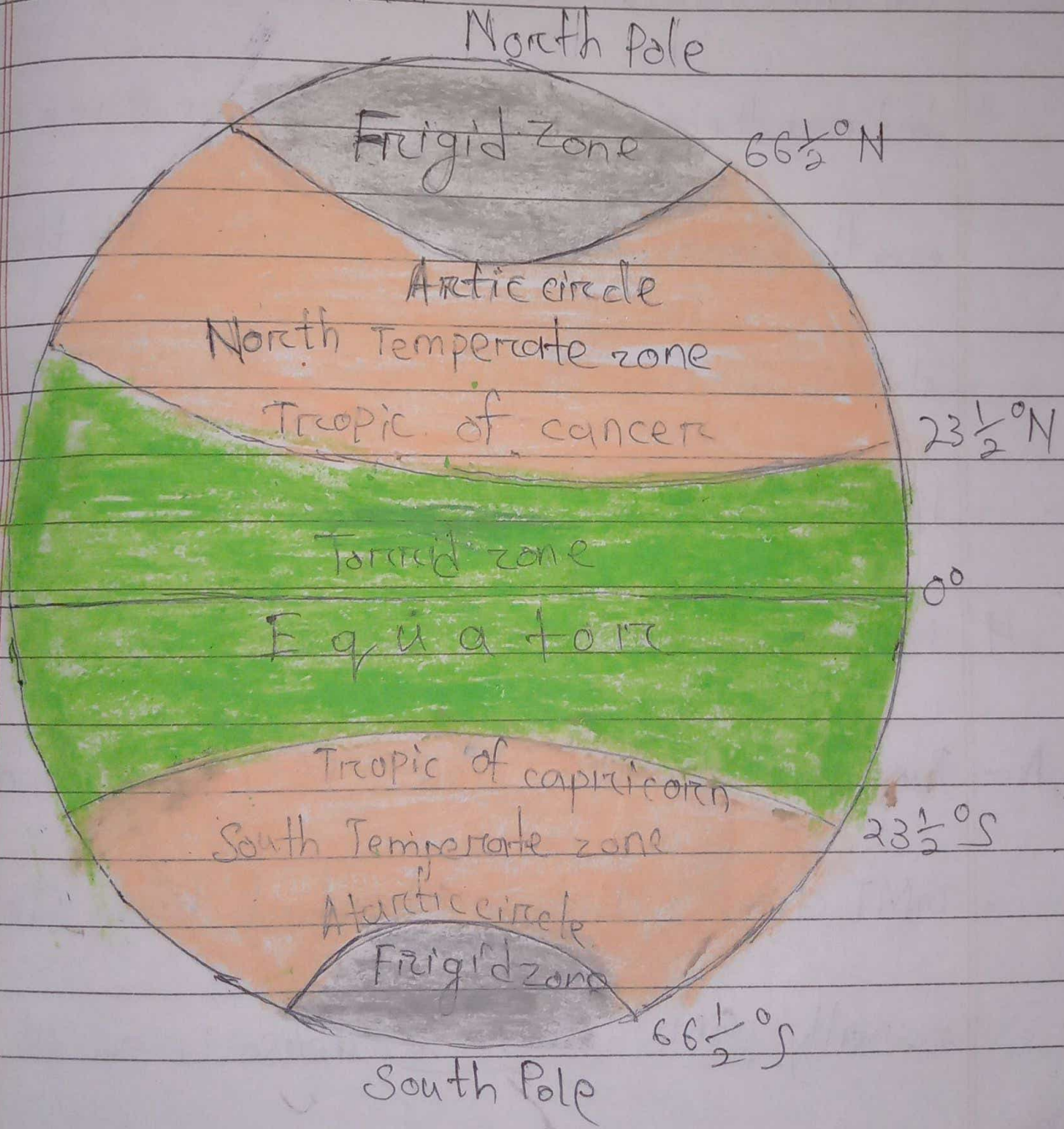
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Answer the following questions.

1. Define the globe.

Ans A globe is a miniature form of the Earth.

2. Draw a neat diagram showing the temperature zones of the Earth.



3. What makes the Torrid zone the hottest among the temperature zones?

Ans- The Torrid zone lies between Tropic of Cancer and Tropic of Capricorn. The sun is ~~directly~~ ^{exactly} over the head once in a year, on all the latitudes between these two tropics. The sun rays falling exactly overhead gives out more heat than slanting sun rays. Therefore, the Torrid zone is the hottest among the temperature zones.

4. Why is Bangladesh half an hour ahead of India?

Ans- Bangladesh standard time (BST) is ~~the~~ technically GMT (+6:00). Indian standard time (IST) is usually GMT (+5:30). So, there is a 30 minute

difference there.

5. "What is 'solar time'?"

Ans. Solar time is based on the position of the sun.

It is the time we all use where a day is defined

as 24 hours, the average time that it takes

for the sun to return to its ~~high~~ highest

point in the sky.

6. Why is a standard meridian important for a country?

Ans. Standard meridian is useful for a country because

it shows and fixes a particular time for the

country. A country may have many longitudes in

between and there is a gap of 4 minutes

between each longitude, therefore standard meridian should be there in each ~~country~~ country for the equal time

7. How ~~can~~ can we measure the time between countries? Explain, giving an example.

Ans- The earth has 360 imaginary lines called longitude or meridians running vertically between the poles.

Each of the longitudes is called a degree. The

0 degree longitude passing through Greenwich, near

London, is considered as standard and the time

of all other time zones are calculated ~~accordingly~~

accordingly. The time difference between each

longitude is 4 minutes. So, if ~~it~~ it is 12,

noon at Greenwich (0 degree), it would be

12:04 pm at 1 degree meridian ~~se~~ and so on. In

India, the standard meridian is 82-and-half

degree. So, the ^{time} difference between Greenwich

and India is 82.5×4 , which is 330 minutes :

(5 hours 30 minutes)

8. How are the lines of latitude and longitude useful to us?

Ans- As lines of latitude and longitudes cross, each other,

they form a grid. Any position on earth can be

located if the latitude and longitude are known.

The grids on the maps help us find a particular

location. Longitudes also help us to calculate the

time of a place.

Multiple choice questions

1. Which of these statements is correct?

a) A globe is more accurate than a map as it follows

the curvature of the earth. It is therefore able

to give the correct size of continents and show

distances without distortion.

2. The axis of the earth is tilted at an angle of

c) $23\frac{1}{2}^{\circ}$ to the vertical.

3. When you say that your school lies to the

south of the airport, you are giving the

b) relative location of your school.

4. Lines of latitude are imaginary lines

1) that run horizontally across the surface of the Earth

5. The equator is drawn

↳ Around the middle of the globe.

6. Why is there an unequal distribution of heat on the surface of the earth?

↳ Due to the tilted nature of the earth's axis, the angle of incidence of the Sun's rays differs from place to place. This causes the unequal distribution of heat energy across the surface of the earth.

7. The Torrid zone lies between the

↳ Tropic of Cancer and the Tropic of Capricorn.

8. The Prime Meridian.

b) passes through Greenwich, England, where the British Royal Observatory is located.

9. In 1884, Sir Standford Flemming divided the world into

a) 24 time zones.

10. Why India adopt the Indian Standard Time (IST)?

d) all of the above.

11. The time difference between GMT and IST is

c) $5\frac{1}{2}$ hours

12. If a person crosses the International Date Line

while moving from the west to east, he or she

b) loses a day.

13. One degree of longitude is equal to

4) 4 minutes of time.

14. The meridian that passes through Greenwich is called

4) The Prime Meridian.

Debasmita Mohanta
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