Rithubhethangalum Samayavum

Que 1: Each country considers a particular longtitude as a standard meridian for a common time, Why? ***Marks :(2)***

Ans: Each longitude has a different local time. If different places within a country have different times, it may cause confusions and problems. Therefore, the longitudinal line passing through the centre of the country, is considered standard meridian. The Local time at the standard meridian is the standard time of that country.

Que 2: Explain the importance of Greenwich Line and International Date Line in time calculation. ***Marks :(3)***

Ans: Greenwich line -

- Zero-degree longitude.
- Time at Greenwich is considered as the base for world time calculation.

International date line -

- 180-degree longitude.
- Deviated to avoid land areas and to pass through ocean.
- The 24-hour time difference is experienced on crossing this line.

Que 3: Who among the children can first see the rising sun?

children from Delhi, Kolkata, Mumbai and Chennai ***Marks :(1)***

Ans: Kolkata

Que 4: How much is the time required for the Indian territory to move past the sun? ***Marks :(2)***

Ans: The time required to pass 10 longitude is 4 minutes.

The time required to pass 30 degree 30 x 4 = 120 minutes or 2 hours

Que 5: Why is the Greenwich Line called the Prime Meridian? ***Marks :(2)***

Ans: Time anywhere in the world is calculated based on the Greenwich Line.

Que 6: Match column B with A

Greenwich Time 6 am – Monday ***Marks :(5)***

A		**B**	
1	**30 ^{0} East**	**A**	**10 PM Sunday**
2	**120 ^{0} West**	**B**	**2 AM Monday**

3	**90 ^{0} East**	**C**	**6.16 AM Monday**
4	**60 ^{0} West**	**D**	**12 Noon Monday**
5	**4 ^{0} East**	**E**	**8 AM Monday**

Ans: 1-E,2-A,3-D,4-B,5-C

Que 7: Complete the table given below assuming, ***Marks :(4)***

Greenwich Time: Monday 8 AM

Westward			**Eastward**		
Longitude	**Day**	**Time**	**Longitude**	**Day**	**Time**
30^0	**Monday**	**a.....**	**30^0**	**b.....**	**10 AM**
C.....	**Monday**	**5 AM**	**45^0**	**d.....**	**e.....**

Ans: a. 6AM, b. Monday c. 450 d. Monday e. 11 AM

Que 8: Why is 82½0 E longitude considered as the standard meridian of India? ***Marks :(2)***

Ans: Longitudinal Extent of India = 68° East- 97° East.

The 82½ ° East longitude passes almost through middle of India

Que 9: Which of the following statement is false? ***Marks :(1)***

a. Earth rotates from west to east.

b. Earth takes 24 hours to complete one rotation.

c. In one hour, the sun passes over 4° longitudes.

d. The sun rises in the east.

Ans: c. In one hour, the sun passes over 4° longitudes.

Que 10: Which is the latitudinal region where the seasonal changes are very obvious ? ***Marks :(1)***

Ans: Mid latitudinal region(Temperate zone).

Que 11: Name the two transitional seasons between summer and winter? ***Marks :(1)***

Ans: Spring and Autumn

Que 12: Identify the season during which the plants shed their leaves? ***Marks :(1)***

a. winter **b. spring**

c. summer **d. autumn**

Ans: d. autumn

Que 13: Which season is experienced in the northern hemisphere when sun apparently shifts from tropic of cancer to the equator? ***Marks :(1)***

a. Spring b. Summer c. Autumn d. Winters

Ans: b. summer

Que 14: Where is the apparent position of the sun on following days? ***Marks :(2)***

a: September 23rd

b: June 21

Ans: a. Equator

b. Tropic of cancer

Que 15: Which among the following statements is not related to longitude?

a. Time calculation.

b. Time zones

c. The value increases poleward. ***Marks :(1)***

Ans: c. The value increases poleward.

Que 16: Complete the table given below ***Marks :(3)***

Earth	**Time required**
To rotate 15^0	**A .....**
To complete one rotation	**B. .....**
To complete a revolution	**C .....**

Ans: A: 1 Hour

B: 24 Hours

C: 365 Days 6 Hours

Que 17: Find the longitude of the place in the Eastern Hemisphere with a time difference of 7 hours from the Greenwich time? ***Marks :(2)***

Ans: One degree longitude = 4 minutes

15 degrees = 1 hour

15 x 7 = 105° east

Que 18: Geetha and Gopu moved 10° eastward and westward respectively, What is the time difference between these two places ? ***Marks :(2)***

Ans: The longitudinal difference between them is 10 degrees + 10 degrees = 20 degrees.

1º (degree) longitude has a time difference of 4 minutes.

20 x 4 = 80 minutes (1 hour and 20 minutes)

Time difference 1.20 Hours

Que 19: Write a phenomena that occur on the earth due to the tilt of axis ? ***Marks :(1)***

Ans: Apparent movement of the sun / climatical change /variation in temperature

Que 20: Office hours in Manipur start at 8 am. What is the geographical reason for this? ***Marks :(3)***

Ans: Manipur is an eastern state.

In the eastern states, daylight starts early and it gets dark early.

Que 21: A man started travelling westward from India on Wednesday at 8 am and reached New York after 10 hours. Calculate the time at new York then? ***Marks :(3)***

Ans: India - New York Longitudinal Difference

=82½ degrees+ 74 degrees = 156½ degrees

Time difference = 1561/2 x 4 = 626 minutes

(10 hours and 26 minutes)

Time at New York when it is 8 am Wednesday (IST)=8 am wednesday-10 hour 26 minutes

=9.34 pm Tuesday

Time at New York after 10 hours= 9.34 pm Tuesday + 10 hours

= 7.34 am Wednesday

Que 22: Which of the following days is a winter solstice? ***Marks :(1)***

a. September 23 b. March 21

c. December 22 d. June 21

Ans: c. December 22

Que 23: What are the seasons experienced in India when the apparent position of the Sun is on Tropic of cancer and Tropic of capricorn ? ***Marks :(2)***

Ans: Tropic of cancer - summer

Tropic of capricorn – Winter

Que 24: What are the reasons for the occurrence of seasons? ***Marks :(3)***

Ans: - Revolution of earth

- inclination of axis

- The parallelism of axis

Que 25: Sun rises in Kerala about 1½ hours after the sunrise in the eastern parts of India. Why? ***Marks :(2)***

Ans: - Earth rotates from west to east

- There is a longitudinal difference of $22^{1/2\ 0}$ between Kerala and eastern end of India.

Que 26: Find the time difference between the given longitudes.

*** 97 degrees east - 68 degrees east** ***Marks :(3)***

Ans: The difference between given longitudes is = 29^0

1 degree longitude corresponds to 4 minutes

Thus for 29^0 There is a time difference of 29^0 x 4= 116 minutes

= 1 hour 56 minutes.

Que 27: The plants sprouting, Mango trees blooming and Jackfruit trees bearing buds. In which season do these usually occur? ***Marks :(1)***

Ans: Spring

Que 28: A cricket match starts in England at 9am Monday. At What time can it be watched live in India? why? ***Marks :(3)***

Ans: England standard Meridian = 0 degrees (Greenwich Line)

Indian Standard Meridian = $82½^0$ East

The Longitudinal difference = 82½ degrees

1 degree longitude = 4 minutes

Time difference = 5½ hours

Time in India =9 am + 5 hours 30 minutes=2.30 pm Monday

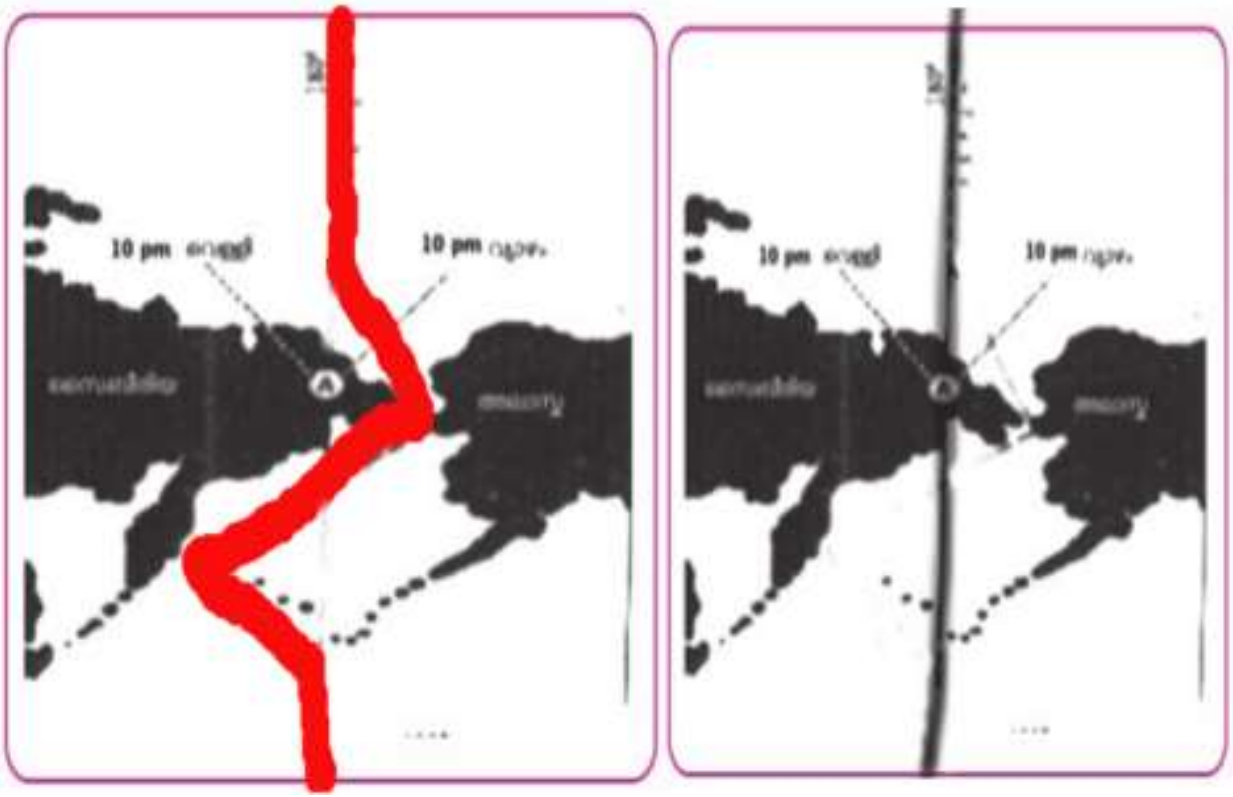
Que 29: If the statement below is incorrect, rewrite it. ***Marks :(1)***

December 22 to March 21 is the spring season in the Northern Hemisphere.

Ans: December 22 to March 21 is the winter season in the Northern Hemisphere

March 21 to June 21 is the seasonal spring in the Northern Hemisphere.

Que 30: Below are the pictures drawn by Veena and Ravi depicting International Date Line. Which of these is correct? Why? ***Marks :(3)***



1. Veena 2. Ravi

Ans: Picture 1 is correct (Veena)

*International Date Line drawn deviated to avoid the inhabited land areas.

If this line passes through the land, same land area experiences two different days.

Que 31: What change should be made in the calendar for travelers crossing the International Date Line towards west? ***Marks :(1)***

(a) increase a day **(b) reduce one day**

(c) 12 hours increase **(d) None of these**

Ans: (a) Increase a day

Que 32: February has 29 days once in every 4 years why ? ***Marks :(2)***

Ans: It takes 365 days 6 hours for completing one revolution. Normally 365 days are there in a calendar year. Remaining 6 hours in every year is taken together as one additional day in the fourth year.