UNIQUE STUDY POINT

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Class: VI	**Subject:** Social Science	**Session:** 2025-26
Chapter: 01 - Locating Places on the Earth	**Time:** 1½ Hours	**Max. Marks:** 40

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

SECTION A - Multiple Choice Questions (1 mark each)

Q1. Which of the following statements about Earth is correct?

(a) Earth is a perfect sphere

(b) Earth is slightly flattened at the Equator

(c) Earth is slightly flattened at the poles

(d) Earth is cylindrical in shape

Q2. The symbol 'PO' on an Indian map represents:

(a) Police Station

(b) Post Office

(c) Power Office

(d) Public Office

Q3. When you cross the International Date Line traveling westward, you:

(a) Subtract one day

(b) Add one day

(c) Add one hour

(d) Subtract one hour

Q4. The value of the Prime Meridian is:

(a) 0° latitude

(b) 0° longitude

(c) 90° latitude

(d) 180° longitude

Q5. India's longitudes extend approximately from:

(a) 68°E to 97°E

(b) 8°N to 37°N

(c) 0° to 180°

(d) 50°W to 80°W

Q6. The temperate climate zone is found:

(a) Near the Equator

(b) Near the poles

(c) Between the Equator and poles

(d) Only in the Southern Hemisphere

Q7. A book or collection of maps is called:

(a) Dictionary

(b) Encyclopedia

(c) Atlas

(d) Almanac

Q8. The ancient Indian term for the prime meridian was:

(a) Akṣa rekhā

(b) Madhya rekhā

(c) Diganta rekhā

(d) Kṣitija rekhā

Q9. The latitude of the South Pole is:

(a) 0°

(b) 90°N

(c) 90°S

(d) 180°S

Q10. If a place is located southwest of your position, in which direction must you travel to reach it?

(a) Northeast

(b) Northwest

(c) Southeast

(d) Southwest

SECTION B - Short Answer Questions (2 marks each)

Q11. Why are time zones not perfectly straight lines following meridians of longitude?

Q12. What are the four cardinal directions? Name the four intermediate directions.

Q13. Define the term 'Equator'. What is its latitude value?

Q14. Why do we consider Earth to be spherical even though it is not a perfect sphere?

SECTION C - Short Answer Questions (3 marks each)

Q15. Explain the relationship between the Sun's position and local time at different longitudes. Why do eastern regions see sunrise before western regions?

Q16. Describe any three types of maps mentioned in your textbook with one example of each.

Q17. How were ancient Indian cities identified as being on the Ujjayinī meridian? Why was precision in measuring longitude difficult in ancient times?

SECTION D - Long Answer Question (5 marks)

Q18. Explain the concept of time zones with reference to Earth's rotation. How does the 15° per hour rotation relate to time differences? Why is it convenient for countries to adopt standard time rather than using local time everywhere?

SECTION E - Case Study Based Questions (4 marks each)

Q19. Read the following case and answer the questions:

A student is creating a map of her neighborhood for a school project. The area she needs to map is 2 km × 1.5 km. She has an A4 paper (21 cm × 29.7 cm) to draw the map. She decides to use appropriate scale, mark cardinal directions, and use symbols for her school, a temple, a park, and the main road.

(a) Suggest an appropriate scale she could use for her map. (1 mark)

(b) Why should she include symbols on her map? (1 mark)

(c) Why is it important to mark directions on the map? (1 mark)

(d) Name the three components of a map that she is using. (1 mark)

Q20. Read the following case and answer the questions:

Two friends, Rahul and Meera, are discussing a cricket match. Rahul is in Sydney, Australia (longitude 151°E) and Meera is in London, England (longitude 0°). The match is scheduled to start at 2:00 PM local time in Sydney. Meera wants to watch the match live from London.

(a) What is the longitude difference between Sydney and London? (1 mark)

(b) Calculate the time difference between Sydney and London. (1 mark)

(c) What time should Meera tune in to watch the match in London? (1 mark)

(d) Why do Sydney and London have different local times? (1 mark)

DETAILED ANSWER KEY - PAPER 04

SECTION A - Answers to MCQs

Ans 1. (c) Earth is slightly flattened at the poles

Earth is not a perfect sphere but is slightly flattened at the North and South Poles. This shape is called an oblate spheroid. However, for practical purposes in geography, we consider it spherical.

Ans 2. (b) Post Office

According to the Survey of India's standard symbols, 'PO' represents a Post Office, while 'PTO' represents Post and Telegraph Office, and 'PS' represents Police Station.

Ans 3. (b) Add one day

When crossing the International Date Line traveling westward (from east to west), you add one day. For example, if you cross on Sunday, it becomes Monday.

Ans 4. (b) 0° longitude

The Prime Meridian, also called Greenwich Meridian, is marked as 0° longitude. It serves as the reference point for measuring all other longitudes.

Ans 5. (a) 68°E to 97°E

India's longitudes extend approximately from 68°E (western extremity) to 97°E (eastern extremity), covering about 29° of longitude.

Ans 6. (c) Between the Equator and poles

The temperate climate zone is found in the regions between the hot Equator and the cold polar regions. It has moderate temperatures and distinct seasons.

Ans 7. (c) Atlas

An atlas is a book or collection of maps that may show different countries, regions, or specific types of information like physical features or political boundaries.

Ans 8. (b) Madhya rekhā

The ancient Indian term for the prime meridian was 'madhya rekhā' which means 'middle line'. It passed through Ujjayinī (modern Ujjain).

Ans 9. (c) 90°S

The South Pole is located at the southernmost point of Earth at latitude 90°S. Similarly, the North Pole is at 90°N.

Ans 10. (d) Southwest

If a place is southwest of your position, you must travel in the southwest direction to reach it. This is the combination of South and West directions.

SECTION B - Answers to Short Answer Questions

Ans 11.

Time zones are not perfectly straight lines following meridians of longitude because:

1. They need to respect international and national borders
2. They deviate to keep entire countries or regions in the same time zone
3. If time zones followed meridians exactly, some countries would be split into multiple time zones, creating administrative difficulties
4. The boundaries are adjusted for convenience and practical purposes to avoid dividing cities, states, or small countries

Ans 12.

Four Cardinal Directions:

1. North (N)
2. South (S)
3. East (E)
4. West (W)

Four Intermediate Directions:

1. Northeast (NE) - between North and East
2. Southeast (SE) - between South and East
3. Southwest (SW) - between South and West
4. Northwest (NW) - between North and West

Ans 13.

The **Equator** is an imaginary line that circles the Earth horizontally, exactly halfway between the North Pole and the South Pole.

Latitude value: The Equator is at 0° latitude.

It is the longest parallel of latitude and serves as the reference line from which all other latitudes are measured. Places north of the Equator have northern latitudes (marked N), while places south of it have southern latitudes (marked S).

Ans 14.

We consider Earth to be spherical even though it is not a perfect sphere because:

- The flattening at the poles is very slight compared to Earth's overall size
- For practical purposes in geography, maps, and navigation, treating Earth as a sphere is accurate enough
- The difference between the polar and equatorial diameters is less than 1% of Earth's total diameter
- Calculations and representations are much simpler when we treat Earth as spherical
- The spherical approximation works well for most geographical and navigational purposes

SECTION C - Answers to Short Answer Questions

Ans 15.

Relationship between Sun's position and local time:

The Sun appears to move across the sky from east to west due to Earth's rotation. However, actually Earth is rotating from west to east. This rotation creates the concept of local time:

- When the Sun is directly overhead at a place (noon), it is considered 12:00 PM local time

• Different longitudes face the Sun at different times as Earth rotates
• For every 15° of longitude difference, there is 1 hour difference in local time
• Places to the east experience noon earlier than places to the west

Why eastern regions see sunrise before western regions:

Eastern regions see sunrise before western regions because:
• Earth rotates from west to east (counterclockwise when viewed from the North Pole)
• As Earth rotates, the eastern parts come into sunlight first
• By the time western regions rotate to face the Sun, eastern regions have already experienced sunrise
• This is why countries like Japan (far east) see the sunrise much earlier than countries like USA (far west)
• For example, when the sun rises in Arunachal Pradesh (eastern India), it is still dark in Gujarat (western India)

Ans 16.

Three types of maps are:

1. Physical Maps:
• These maps show natural features of Earth
• They display mountains, plateaus, plains, rivers, oceans, deserts, etc.
• Different colors are often used to show different elevations or terrain types
• **Example:** A map showing the Himalayan mountain ranges, rivers like Ganga and Yamuna, and the Indian Ocean

2. Political Maps:
• These maps show political divisions and boundaries
• They display countries, states, cities, capitals, and international borders
• They focus on human-created boundaries rather than natural features
• **Example:** A map of India showing all States, Union Territories, their capitals, and neighboring countries

3. Thematic Maps:
• These maps show specific types of information or themes
• They can display population density, rainfall distribution, crop patterns, mineral resources, etc.
• Each thematic map focuses on one particular aspect
• **Example:** A map showing the distribution of rainfall across India during monsoon season, or a map showing population density in different states

Ans 17.

How ancient Indian cities were identified on the Ujjayinī meridian:

• Ancient astronomical texts mentioned specific cities as being located on the madhya rekhā (Ujjayinī meridian)
• Cities like Kurukshetra, Rohitaka (Rohtak), Ujjayinī (Ujjain), Māhiṣhmati (Maheshwar), and Kumārī (Kanyakumari) were identified
• Astronomers observed celestial events like eclipses and planetary positions from these locations
• They calculated that these cities shared the same longitude based on simultaneous observations
• Some cities mentioned in texts are very close to 75.8°E, while others are slightly off

Why precision was difficult in ancient times:

Measuring longitude precisely was difficult in ancient times because:

1. **Lack of accurate timekeeping:**
   - Determining longitude requires very precise measurement of time
   - Ancient sundials and water clocks were not accurate enough
   - Even small errors in time measurement lead to large errors in longitude calculation

2. **Limited instruments:**
   - Modern instruments like chronometers (accurate clocks) were not available
   - Astronomical observations had limitations in precision

3. **Calculation challenges:**
   - Complex mathematical calculations were done manually
   - Small observational errors could accumulate in calculations

This is why some cities mentioned in ancient texts as being on the Ujjayinī meridian are actually a few degrees away from 75.8°E when measured with modern instruments.

SECTION D - Answer to Long Answer Question

Ans 18.

Concept of Time Zones and Earth's Rotation:

Time zones are regions of Earth that follow the same standard time. They are based on Earth's rotation and longitude.

Earth's Rotation and Time:

- Earth rotates on its axis from west to east
- It completes one full rotation of 360° in 24 hours
- This rotation causes day and night as different parts face the Sun
- As Earth rotates, different longitudes experience noon (when Sun is overhead) at different times

The 15° per Hour Relationship:

The relationship between rotation and time is mathematical:

- Total rotation = 360° in 24 hours
- Rotation per hour = 360° ÷ 24 = 15°
- This means Earth rotates through 15° of longitude every hour
- Therefore, for every 15° difference in longitude, there is 1 hour difference in local time

Practical application:

- If two places are 15° apart in longitude, their local times differ by 1 hour
- If two places are 30° apart, their local times differ by 2 hours
- If two places are 45° apart, their local times differ by 3 hours
- Places to the east have earlier times (ahead), places to the west have later times (behind)

Time Zones - Division of 15°:

- The world is divided into time zones roughly following 15° intervals
- Starting from the Prime Meridian (0°), we have zones at 15°E, 30°E, 45°E, etc. going eastward
- Similarly, westward we have 15°W, 30°W, 45°W, etc.
- Each zone represents a one-hour difference from Greenwich Mean Time (GMT)
- The boundaries are adjusted to follow country borders for convenience

Why Countries Use Standard Time Instead of Local Time:

Countries adopt standard time rather than using local time everywhere because:

1. Administrative Convenience:
- If every city used its own local time based on longitude, there would be hundreds of different times in a country
- This would make government administration extremely difficult
- Official documents, schedules, and records would be confusing

2. Communication and Coordination:
- Business operations need uniform time across the country
- Banking transactions, stock markets, and trade require synchronized timing
- Meetings and conferences would be impossible to schedule across cities

3. Transportation:
- Railways need uniform time for scheduling trains
- Airlines require standard time for flight schedules
- Without standard time, train and flight timetables would be chaotic

4. Broadcasting and Media:
- TV and radio programs need to be scheduled for the whole country
- News broadcasts, live events would be difficult to coordinate

5. Simplicity:
- Everyone in the country can synchronize their watches and clocks
- Daily life becomes simpler when everyone follows the same time
- School timings, office hours, shop opening times can be standardized

Example - India's Standard Time:
- India uses the 82.5°E meridian (passing through Mirzapur near Allahabad) as its standard meridian
- This gives Indian Standard Time (IST) which is 5.5 hours ahead of GMT
- All of India follows this same time despite having 29° longitudinal extent
- Without IST, Mumbai and Kolkata would have different times, creating confusion

Conclusion:
The system of time zones based on 15° longitude per hour creates an organized framework for global timekeeping, while standard time within countries ensures smooth functioning of society, economy, and administration.

SECTION E - Answers to Case Study Based Questions

Ans 19.

(a) Appropriate scale:

Area to map: 2 km × 1.5 km = 2000 m × 1500 m

Paper size: 21 cm × 29.7 cm

Suggested scale: **1 cm = 100 m** or **1:10,000**

With this scale:

• 2000 m will be represented as 20 cm (fits within 21 cm width)

• 1500 m will be represented as 15 cm (fits within 29.7 cm length)

• This leaves space for title, legend, and other details

Alternative acceptable scale: 1 cm = 150 m (which would make the map 13.3 cm × 10 cm, also fits well)

(b) Why include symbols:

She should include symbols on her map because:

• There is limited space on the paper to draw detailed pictures of buildings and features

• Symbols are simple, clear, and universally understood

• They allow many different features (school, temple, park, roads) to be shown clearly

• Symbols make the map neat, professional, and easy to read

• They save space while conveying all necessary information

(c) Importance of marking directions:

It is important to mark directions on the map because:

• Directions help orient the map correctly with respect to the real world

• They enable users to understand which way is north, south, east, and west

• Without directions, people cannot navigate using the map

• Directions help in describing locations (e.g., "the temple is north of the school")

• They are essential for planning routes and understanding spatial relationships

(d) Three components of a map:

The three components of a map that she is using are:

1. **Distance (Scale):** To show the relationship between map distance and actual distance
2. **Direction:** Cardinal directions to show orientation
3. **Symbols:** To represent school, temple, park, and road on the map

Ans 20.

(a) Longitude difference:

Sydney longitude = 151°E

London longitude = 0° (Prime Meridian)

Difference = 151° - 0° = 151°

(b) Time difference calculation:

Earth rotates 15° per hour

Time difference = 151° ÷ 15° per hour

= 10 hours 4 minutes

(Calculation: 151 ÷ 15 = 10.0667 hours = 10 hours + 0.0667 × 60 minutes = 10 hours 4 minutes)

Since Sydney is east of London, Sydney time is ahead of London time by 10 hours 4 minutes.

(c) Time for Meera to tune in:

Match starts in Sydney at: 2:00 PM Sydney time

Sydney is 10 hours 4 minutes ahead of London

Therefore, London time = 2:00 PM - 10 hours 4 minutes

= 14:00 - 10:04 = 3:56 AM London time

Answer: Meera should tune in at approximately **3:56 AM** (or about 4:00 AM) in London to watch the match live.

(d) Why Sydney and London have different local times:

Sydney and London have different local times because:

- They are located at different longitudes (Sydney at 151°E, London at 0°)
- Earth rotates from west to east, so different longitudes face the Sun at different times
- Sydney is far to the east of London, so it experiences sunrise, noon, and sunset much earlier
- The 151° difference in longitude creates approximately 10 hours difference in local time
- As Earth rotates, Sydney comes into sunlight hours before London does
- This is why when it is afternoon in Sydney, it is early morning (or even nighttime) in London

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