



Class 9 Social Science – Chapter 3

Important Questions – Atmosphere and Climate

Book: *Understanding Society: India and Beyond – Grade 9, Part 1*

Session: 2026–27



Very Short Answer Questions

1. What is the **atmosphere**?
 2. What are the major gases present in the atmosphere?
 3. Name the main layers of the atmosphere.
 4. Which is the lowest layer of the atmosphere?
 5. Which layer contains the ozone layer?
 6. What is atmospheric pressure?
 7. Why does atmospheric pressure decrease with height?
 8. Why do we not normally feel the pressure of the atmosphere?
 9. In which layer of the atmosphere do aeroplanes generally fly?
 10. What is weather?
 11. What is climate?
 12. Name the four main seasons of India.
 13. What is the monsoon?
 14. What is the south-west monsoon?
 15. What is the north-east monsoon?
 16. What is meant by retreating monsoon?
 17. What is climate change?
 18. What is global warming?
 19. What is a carbon footprint?
 20. Name two ways of reducing our carbon footprint.
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Short Answer Questions

- 1. What is the atmosphere? Explain its importance.**
- 2. Explain the composition of the atmosphere.**
- 3. Describe the different layers of the atmosphere.**
- 4. Why is the atmosphere important for life on Earth?**
- 5. Why do we not feel the pressure exerted by the atmosphere?**

The textbook specifically asks students to explain why atmospheric pressure is not normally felt by us.

- 6. Why do aeroplanes fly in the stratosphere?**
- 7. Distinguish between weather and climate.**
- 8. What are the main factors that influence the climate of a place?**
- 9. Explain the four main seasons of India.**
- 10. What is the south-west monsoon? Why is it important for India?**
- 11. What is the north-east monsoon?**
- 12. Differentiate between the south-west monsoon and north-east monsoon.**

The textbook specifically asks students to distinguish between these two monsoon systems.

- 13. What is meant by the retreating monsoon?**
- 14. Why does India experience diverse climatic conditions?**
- 15. Why do different regions of India receive different amounts of rainfall?**
- 16. Why does Shillong receive more rainfall than Kolkata?**
- 17. Why does Delhi receive more rainfall than Jodhpur?**

These two questions are specifically included in the textbook's climate-data activity.

18. What is climate change?

19. How do human activities contribute to climate change?

20. What measures can individuals take to reduce their carbon footprint?

The textbook links climate change mainly to human activities such as burning fuels and cutting trees and suggests energy conservation, renewable sources, tree planting and eco-friendly lifestyles as ways to reduce the carbon footprint.



Long Answer Questions

1. Explain the structure and composition of the atmosphere.

Include:



Importance of atmosphere



Major gases



Different atmospheric layers



Variation of temperature and pressure with height

2. Describe the different layers of the atmosphere and explain their importance.

Focus on:

- Troposphere
- Stratosphere
- Mesosphere
- Thermosphere
- Exosphere

Also explain why the **troposphere** and **stratosphere** are important for human activities.

3. Explain the mechanism and importance of the Indian monsoon.

Discuss:

-  Seasonal heating
 -  Pressure differences
 -  Winds
 -  South-west monsoon
 -  Rainfall distribution
 -  Importance for agriculture and economy
 -  Retreating monsoon
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4. Explain the major seasons of India.

Summer

High temperatures and changing pressure conditions.

Rainy Season

South-west monsoon brings most of India's annual rainfall.

Retreating Monsoon

The monsoon winds withdraw gradually from the Indian subcontinent.

Winter

Temperatures decrease and the north-east monsoon influences some parts of India.

5. Why does India have diverse climatic conditions?

Explain how climatic conditions vary because of differences in:

-  Latitude
 -  Relief
 -  Distance from the sea
 -  Winds
 -  Monsoon patterns
 -  Mountains
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6. Explain how the monsoon provides a climatic unity to India despite regional differences.

The textbook asks students to examine whether the monsoons provide a strong framework that gives **overall climatic unity to the country**.

7. Explain climate change and its major causes.

Discuss:

-  Global warming
 -  Burning fossil fuels
 -  Deforestation
 -  Increase in greenhouse gases
 -  Rising temperatures
 -  Extreme weather events
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8. What steps can be taken to reduce the effects of climate change?

Include:

-  Save energy
 -  Use renewable energy
 -  Plant and protect trees
 -  Use cleaner transport
 -  Reduce, reuse and recycle
 -  Conserve resources
 -  Adopt eco-friendly lifestyles
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HOTS / Analytical Questions

1. Why is the atmosphere essential for life even though humans cannot see it?
2. Why would life on Earth be very different if the atmosphere did not exist?
3. Why does atmospheric pressure change with altitude?
4. Why are mountains important in influencing rainfall patterns?

5. Why does Shillong receive much more rainfall than some other cities located at similar latitudes?
 6. Why can two places in India experience very different climates during the same month?
 7. How does the Indian monsoon influence agriculture and everyday life?
 8. Why can a change in monsoon rainfall have consequences for the entire economy?
 9. Why should climate change be considered a global problem rather than only a local problem?
 10. How can individual actions contribute to reducing climate change?
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Data-Based Questions

The textbook provides **average monthly temperature and rainfall data for 10 representative stations** and asks students to create temperature-rainfall graphs and draw conclusions about India's diverse climate.

Important questions based on this activity:

1. Which station has the most extreme climate?
 2. Which stations are influenced by the retreating monsoon?
 3. Which are the hottest stations in February?
 4. Which are the hottest stations in June?
 5. Arrange the stations according to their distance from the equator.
 6. Which station receives the highest rainfall?
 7. Which station has the greatest annual temperature range?
 8. What relationship can you observe between temperature and rainfall?
 9. Why do coastal regions generally experience less extreme temperatures?
 10. What does the data reveal about India's climatic diversity?
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Map-Based Important Questions

1. On a map of India, identify:

-  Areas receiving heavy rainfall
-  Areas receiving low rainfall
-  Himalayan region
-  Coastal regions
-  Areas affected by the south-west monsoon
-  Areas influenced by the retreating monsoon

2. Mark the normal dates of retreating monsoon shown in the textbook map.

The textbook includes a map showing the **normal dates of retreating monsoon** across India.

3. Locate the major climatic regions represented by the stations in Table 3.3.



Assertion–Reason Questions

1. Assertion:

The atmosphere is essential for life on Earth.

Reason: It provides gases and conditions necessary for life.

2. Assertion:

Atmospheric pressure decreases with altitude.

Reason: The weight of air above decreases as altitude increases.

3. Assertion:

India experiences a seasonal reversal of winds.

Reason: Seasonal changes in heating and pressure contribute to the monsoon system.

4. Assertion:

Shillong receives heavy rainfall.

Reason: Its location and relief help enhance rainfall from moisture-laden monsoon winds.

5. Assertion:

India has diverse climatic conditions.

Reason: Factors such as latitude, relief, distance from the sea and monsoon influence climate differently across regions.

6. Assertion:

Human activities contribute to climate change.

Reason: Activities such as burning fuels and cutting trees contribute to global warming and changes in weather patterns.

The textbook explicitly connects climate change with human activities such as fuel burning and deforestation.

Top 10 Questions for Exam Revision

If students have limited time, prepare these first:

1. ★ Explain the **composition and importance of the atmosphere**.
2. ★ Draw and explain the **layers of the atmosphere**.
3. ★ Why do we not feel atmospheric pressure?
4. ★ Why do aeroplanes fly in the stratosphere?
5. ★ Explain the **four main seasons of India**.
6. ★ Differentiate between the **south-west and north-east monsoons**.
7. ★ Explain why India experiences **diverse climatic conditions**.
8. ★ Why does Shillong receive more rainfall than Kolkata?
9. ★ Explain **climate change**, its causes and effects.
10. ★ What steps can we take to reduce our **carbon footprint**?

Quick Revision Chart

ATMOSPHERE

Composition



 Gases + Water Vapour + Dust Particles



 Atmospheric Layers



 Temperature + Pressure



 Weather and Climate

INDIAN CLIMATE

Seasonal Changes



 Summer



 South-West Monsoon



 Retreating Monsoon



 Winter



CLIMATE CHANGE

Human Activities



 Burning Fuels +  Deforestation



 Global Warming



 Extreme Weather / Climate Change



 Need for Sustainable Actions

The textbook concludes that reducing our carbon footprint requires measures such as **saving energy, using renewable sources, planting trees and adopting more eco-friendly lifestyles.**

