3 Climates of India

Section A: Fill in the blanks (1 mark each).

1. The _____ is the layer of the atmosphere where all weather phenomena occur.

2. India's monsoon winds originate from the _____ in summer.

3. The Himalayas help protect India from the cold winds of _____.

4. Climate refers to the pattern of weather over a long period, usually _____ years or more.

5. The word monsoon comes from the Arabic word _____ meaning "season".

Section B: Match the following (1 mark each).

A	B	Ans.
a. Latitude	i. Semi-arid	a. ____
b. Landslides	ii. Excess water	b. ____
c. Altitude	iii. Dry climate and heat	c. ____
d. Forest fires	iv. Rain and earthquakes	d. ____
e. Floods	v. Distance from Equator	e. ____
f. Deccan Plateau	vi. Cooler temperature	

Section C: Choose the correct option and tick (✔) the right answer (1 mark each).

1. Which factor decreases temperature as it increases?

   a. Altitude ☐   b. Humidity ☐

   c. Latitude ☐   d. Pressure ☐

2. Which city has an alpine climate?

   a. Mumbai ☐   b. Chennai ☐

   c. Srinagar ☐   d. Delhi ☐

3. Which area in India has a tropical wet climate?

   a. Thar Desert ☐   b. Western Ghats ☐

   c. Ladakh ☐   d. Northern Plains ☐

4. Where are landslides most common?

   a. Deserts ☐   b. Plains ☐

   c. Coastal areas ☐   d. Hills ☐

5. What is the eye of a cyclone?

   a. Cloudless center ☐ b. The windy part ☐

   c. The rainy part ☐ d. Storm ☐

6. Which city is likely to experience the highest temperature?

   a. Darjeeling ☐ b. Nagpur ☐

   c. Munnar ☐ d. Shimla ☐

7. What season follows the monsoon in India?

   a. Winter ☐ b. Summer ☐

   c. Spring ☐ c. Autumn ☐

8. What is a glacial burst?

   a. A type of earthquake in snowy areas ☐

   b. Sudden outflow of glacial lake. ☐

   c. Sudden melting of snow on mountain peaks ☐

   d. A snowstorm occurring in high-altitude regions ☐

9. Which festival is linked with harvest?

   a. Holi ☐ b. Diwali ☐

   c. Pongal ☐ d. Eid ☐

10. Which element is not a factor of climate?

   a. Latitude ☐ b. Topography ☐

   c. Winds ☐ d. Colour of soil ☐

Section D: Write T for True and F for False in the box (1 mark each).

1. The weather of a place is the same as its climate. ☐

2. Monsoon winds are seasonal and bring rainfall to India. ☐

3. The south-west monsoon winds blow from land to sea. ☐

4. Deforestation can contribute to climate change. ☐

5. Mumbai has extreme temperature ranges. ☐

6. Cyclones are caused by high-pressure areas over the sea. ☐

7. Chennai has a tropical climate with hot and humid conditions. ☐

8. Landslides commonly occur in flat desert regions. ☐

9. The India Meteorological Department (IMD) issues weather warnings. ☐

10. The Himalayas influence India's climate. ☐

Section E: Very Short Answer (1–2 sentences, 2 marks each).

1. What is the difference between weather and climate?

   Ans. _____

   _____

2. What is a microclimate?

   Ans. _____

   _____

3. Name the two main seasons in India.

   Ans. _____

   _____

4. What is a monsoon?

   Ans. _____

   _____

5. How does altitude affect temperature?

   Ans. _____

   _____

6. Why do animals grow thick fur in winter?

   Ans. _____

   _____

7. What is a rain shadow area?

   Ans. _____

   _____

8. What is the main cause of the monsoon rains in India?

   Ans. _____

   _____

9. Which part of India receives the most rainfall?

   Ans. _____

   _____

10. Why are hill stations cooler than plains?

    Ans. _____

    _____

Section F: Case Study Questions (4 marks).

1. Analyse the impact of a specific extreme weather event (e.g., a flood, a drought, a cyclone) on a particular region of India.

   Ans. _____

   _____

   _____

2. Compare and contrast the climate and lifestyle of people in a coastal area and a desert area in India.

   Ans. _____

   _____

   _____

3. Research and present a case study on the impact of climate change on a specific ecosystem in India.

   Ans. _____

   _____

   _____

4. Examine the role of traditional knowledge in adapting to climate change in a particular region of India.

   Ans. _____

   _____

   _____

5. Investigate the effectiveness of government policies and initiatives in addressing climate change in India.

   Ans. _____

   _____

   _____

Section G: Long Answer Questions (80–120 words).

1. Explain the major factors that influence the climate of India.

   Ans. _____

   _____

   _____

   _____

2. What are monsoons? Describe how they are formed and how they affect India.

Ans. _____

_____

_____

_____

3. What is climate change? What are its causes and consequences?

Ans. _____

_____

_____

_____

4. How does climate impact the economy, society, and culture of India?

Ans. _____

_____

_____

_____

5. Describe the different types of climates found in India with examples.

Ans. _____

_____

_____

_____

6. What are some common climate-related natural disasters in India? How can we prepare for them?

Ans. _____

_____

_____

_____

Section H: One Word Answer
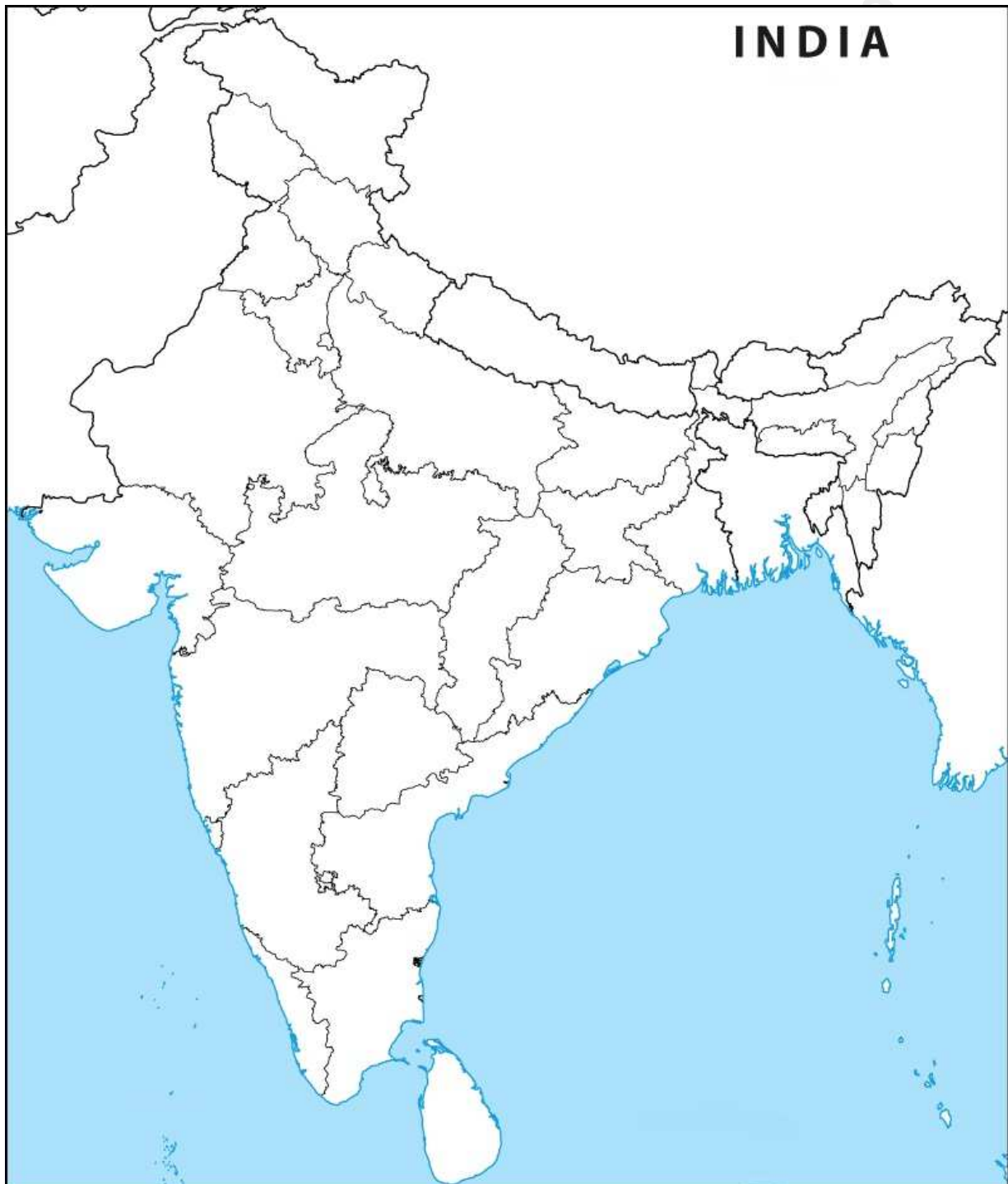
1. Traditional Indian name for spring :- _____

2. One hill station in the Lower Himalayas :- _____

3. A region in India with very cold climate :- _____

4. A small area with different climate called :- _____

5. Indian village with highest rainfall :- _____

6. One greenhouse gas causing climate change :- _____

7. Indian city warm throughout the year due to latitude :- _____

8. State most affected by cyclones :- _____

Section I: Mark the following cities and identify the climate zone for each:

- Leh
- Delhi
- Jaipur
- Chennai
- Panaji

Label them with the type of climate (e.g., Alpine, Tropical, Subtropical, Arid).

Answer

Section A: Fill in the blanks

1. Troposphere
2. Ocean
3. Central Asia
4. 30
5. Mausim

Section B: Match the following

1. a – v
2. b – iv
3. c – vi
4. d – iii
5. e – ii
6. f – i

Section C: MCQs

1. a. Altitude
2. c. Srinagar
3. b. Western Ghats
4. d. Hills
5. a. Cloudless center
6. b. Nagpur
7. c. Autumn
8. b. Sudden outflow of glacial lake
9. c. Pongal
10. d. Colour of soil

Section D: True or False

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

Section E: Very Short Answer

1. Weather is daily atmospheric conditions; climate is the average pattern over decades.
2. A microclimate is a small area with different climate conditions than nearby regions.
3. Summer and Monsoon (or Winter) are two main seasons in India.
4. Monsoon is a seasonal wind that brings rainfall, especially during summer.
5. As altitude increases, temperature decreases.
6. Animals grow thick fur in winter to stay warm in cold temperatures.
7. A rain shadow area gets less rainfall because mountains block the moist winds.
8. Low-pressure over land and high-pressure over the ocean in summer causes monsoon rains.
9. Mawsynram in Meghalaya receives the most rainfall in India.
10. Hill stations are cooler because they are at higher altitudes.

Section F: Case Study Questions (Sample Points – Students to elaborate)

1. Flood in Assam: Heavy monsoon rain causes river overflow, destroying homes, crops, and lives.
2. Coastal vs Desert: Coastal areas are humid with fishing economy; desert areas are dry with limited agriculture.
3. Sundarbans ecosystem: Climate change affects mangroves, increases cyclone frequency, threatens wildlife.
4. Traditional knowledge: Local rain prediction by birds or plants helps farmers prepare better.
5. Govt. initiatives: India's policies include tree planting, solar energy, awareness programs, but face challenges.

Section G: Long Answer Questions

1. The major factors that influence the climate of India:
   - Latitude: Areas near the Equator (e.g., Chennai) are warmer; areas far from it (e.g., Leh) are cooler.
   - Altitude: Higher places (like Shimla) are cooler than low-lying areas.
   - Distance from the sea: Coastal areas (e.g., Mumbai) have moderate temperatures.
   - Winds: Desert winds cause dryness and heat; sea winds bring moisture and rain.
   - Topography: Mountains like the Himalayas block cold winds from Central Asia.

   These factors together cause varied climates in different regions of India.

2. Monsoons are seasonal winds that bring rain.
   - In summer, land heats faster, creating low pressure; moist ocean winds blow toward land.
   - These winds bring southwest monsoon rains to most of India.
   - In winter, wind direction reverses as land becomes cooler, bringing northeast monsoon to some regions.

- Monsoons are vital for agriculture, drinking water, and rivers.
- Their failure causes droughts, and excess can cause floods.

3. Climate change means long-term changes in temperature, rain, and weather.
   - Caused by human activities like burning fossil fuels, deforestation, and pollution.
   - Releases greenhouse gases like CO_2, which trap heat.
   - Leads to global warming, rising sea levels, and changing seasons.
   - Causes more natural disasters like floods and droughts.
   - Affects agriculture, biodiversity, water sources, and human health.

4. Impacts of Climate change on economy, society, and culture of India are
   - Economy: Agriculture depends on monsoon rains; failure leads to crop loss.
   - Society: Water shortages, migration, and health problems can occur.
   - Culture: Many festivals (e.g., Pongal, Onam) are based on seasons and harvests.
   - Lifestyle: Clothing, food, housing vary based on climate.

   Climate shapes how people live, earn, celebrate, and travel in India.

5. The different types of climates found in India are:
   - Alpine climate: Cold and snowy (e.g., Leh, Himalayas)
   - Subtropical climate: Hot summers, cold winters (e.g., Delhi)
   - Arid climate: Very dry, hot days (e.g., Jaipur, Thar Desert)
   - Tropical wet climate: Heavy rainfall (e.g., Kerala, Western Ghats)
   - Semi-arid climate: Moderate rain, hot summers (e.g., Deccan Plateau)
   - Tropical climate: Warm year-round (e.g., Chennai)

   These affect agriculture, vegetation, and people's lives.

6. Some common climate-related natural disasters in India are:
   - Cyclones: Occur mainly on eastern coast; bring strong winds and rain.
   - Floods: Caused by heavy rainfall, glacial bursts, or river overflow.
   - Landslides: Common in hilly regions during the monsoon.
   - Forest fires: Spread in dry forests due to heat or carelessness.
   - Preparation:
     i. Use early warning systems (IMD)
     ii. Government response (e.g., NDRF)
     iii. Plant trees, avoid deforestation
     iv. Build safe infrastructure and raise awareness.

Section H: One Word Answer

1. Vasanta
2. Shimla
3. Leh
4. Microclimate
5. Mawsynram
6. Carbon dioxide (CO_2)
7. Chennai
8. Odisha

Section I