INDIAN SCHOOL AL WADI AL KABIR

Class: IX	Department: : SOCIAL SCIENCE	Subject: Geography
Chapter 4 Q.B. No :4	Topic: Climate	Year :2024-25

1. **A.**	**Define 'weather' and 'climate'.** Weather – The conditions of the atmosphere at a given place for a short period of time with regard to its temperature, atmospheric pressure, wind humidity and precipitation. Climate – The sum total of weather conditions and variations over a large area for a long period of time (more than 30 years).
2. **A.**	**What are the elements of weather and climate?** The elements of weather and climate are – temperature, atmospheric pressure, wind, humidity and precipitation.
3. **A.**	**What do you understand by the word 'monsoon'?** • It is derived from the Arabic word 'mausim', which means season. • The term refers to the seasonal reversal of the wind direction through the year.
4. **A.**	**India has diverse climatic conditions. Explain this statement.** • In summer, Rajasthan may record temperature of 50°C whereas; it may be around 20°C in Jammu and Kashmir. • On a winter night, temperature at Drass may record minus 45°C. Thiruvananthapuram, on the other hand, may have a temperature of 22°C. • Meghalaya receives 400 cms. of rainfall in a year but it drops to less than 10 cms. in Ladakh and western Rajasthan. • Precipitation is mostly in the form of snowfall in the Himalayas while it only rains over the rest of the country. • Most parts of the country receive rainfall from June to September. But some parts like Tamil Nadu coast receives rainfall during October and November. • Coastal areas experience less contrasts in temperature conditions. Seasonal contrasts are more in the interior of the country.
5. **A.**	**Which part of India does experience the highest diurnal range of temperature and why?** The region of India that experiences the highest diurnal range of temperature is the Thar Desert, located in the northwestern part of the country, in the state of Rajasthan. This is because it is filled with sand which gets heated up quickly during day and cooled up very quickly during nights. There is no sea closer to this area and hence there is no moderating effect of a water body.
6. **A.**	**What are the controls affecting the climate of India?** **OR** **Explain the major factors influencing the climate of India.** The important factors that influence the climate of India can be identified as follows: **(a) Latitudinal Location-** India lies in the Northern Hemisphere with the Tropic of Cancer (23°30'N) passing almost through the middle of India. Areas to its south have tropical type of

	climate, while areas to its north have characteristics of sub-tropical climate. **(b) Altitude -** The mountainous areas to the north of India have average altitude of about 6,000 meters. The Himalayas prevent the cold winds from Central Asia from entering the subcontinent. It is because of these mountains that this subcontinent experiences comparatively milder winters as compared to central Asia. **(c) Relief Features –** Relief plays a major role in determining the climate of a place. High mountains act as barriers for cold or hot winds. They may also cause precipitation if they are high enough and lie in the path of rain-bearing winds. **(d) Pressure and Winds.** The pressure and wind conditions over India are unique. They result in seasonal reversal of the wind system and monsoon winds dominate the climate of India. **(e) Distance from the sea.** Places at coastal locations, e.g. Mumbai, Chennai, Kolkata, have maritime or equable climate due to the moderating influence of the sea. But places in the interior of the country, far from the sea, experience extreme climate due to continentality, e.g. Delhi.
7. **A.**	**The bulk of rainfall in India is concentrated over a few months. Why?** The bulk of rainfall is concentrated over the months of June-September. As winter approaches, there is a reversal in the direction of surface winds and monsoons withdraw from the Northern Plains.
8. **A.**	**Which winds account for rainfall along the Malabar coast?** Malabar Coast gets rains from South-West Monsoon Winds.
9. **A.**	**Why does India have a monsoon type of climate?** India has monsoon type of climate because of strong influence of the monsoon winds on the Indian Subcontinent. The summer monsoon causes heavy rainfall when they blow from sea to land. The winter monsoon winds blow from the interior of the continent to the sea and do not cause much rain.
10. **A.**	**The Tamil Nadu coast receives winter rainfall from which winds?** Winter rains in Tamil Nadu are caused by north-east trade winds.
11. **A.**	**How are the 'breaks' in monsoon rainfall explained?** Monsoon tends to have 'breaks' in rainfall; which means that there are wet and dry spells in between. The monsoon rains take place only for a few days at a time and then come the rainless intervals. • The breaks in monsoon rains are related to the movement of the 'monsoon trough of low pressure'. • When the axis of the monsoon trough lies over the plains, rainfall is good in these parts. • When the axis shifts closer to the Himalayas, there is widespread rainfall in the mountains and longer dry spells in the plains.
12. **A.**	**Describe the general weather conditions of the cold weather season.** • Starts by mid-November in northern India and continues till February. • December and January are the coldest months in the northern part of India. • Temperature decreases from the south (24°C - 25°C) to north (10°C - 15°C). • Days are warm and nights are cold. • Frost is common in higher regions. • The cold North-East trade winds prevail over the country. They give rainfall to the eastern coast along Tamil Nadu. • The north-western plains get light rainfall from western disturbances which are of great importance for the growing of rabi crops. • Peninsular India does not have a well-defined cold weather season.

	• It is generally cool, dry, fine weather with clear skies, feeble winds and low humidity and low temperatures.
13. **A.**	**Describe the main features of the hot weather season.** • It is experienced from March to May. • In March, the highest temperature is about 38° Celsius, recorded on the Deccan plateau. • In April, temperatures in Gujarat and Madhya Pradesh are around 42° Celsius. • In May, temperature of 45° Celsius is common in the north-western parts of the country. • In peninsular India, temperatures remain lower due to the moderating influence of the oceans. • During the summer months, temperatures rise and air pressure decreases in the northern part of the country. • Towards the end of May, a vast low-pressure area develops in the region extending from the Thar Desert to Chota Nagpur plateau. **Local winds during summer months:-** **a) "Loo"** • The strong, hot and dry winds blow during the day over northern and north-western India. Direct exposure to these winds sometimes proves fatal. • Dust storms in the evening are very common during May in north and north-western India. They bring temporary respite from the oppressing heat as they lower the temperature slightly and bring light rain and cool breeze. **b) "Kalbaisakhi"** in West Bengal, refers to thunderstorms characterized by violent winds, torrential downpours, and hailstones. **c) "Mango-showers"** are pre-monsoon showers in Kerala and Karnataka. They help in the early ripening of mangoes.
14. **A.**	**Explain the progress of the advancing monsoon in India along with its characteristic features.** • A low-pressure area is developed over the interior parts of India in summer. Winds from the southern hemisphere are attracted towards this low-pressure area. They cross the equator and reach India as the south-west monsoon winds. Near peninsular India they divide into 2 branches – Arabian Sea Branch and Bay of Bengal Branch. • **Arabian Sea Branch of the monsoon** is obstructed by the Western Ghats and brings heavy rainfall to the windward side of the Western Ghats. • They bring a fair amount of rainfall in the Deccan Plateau and Madhya Pradesh. • Thereafter, they enter the Ganga plains and mingle with the Bay of Bengal Branch. • Rajasthan and parts of Gujarat get scanty rainfall. • **The Bay of Bengal branch** strikes the north-eastern parts of the country, causing heavy rainfall in the region. • The lofty mountains deflect the winds towards the west, over the Ganga Plains. • The monsoon is known for its uncertainties. The alternation of dry and wet spells vary in intensity, frequency and duration. While it causes heavy floods in one part, it may be responsible for droughts in the other. • These winds are irregular in their arrival as well as retreat. Hence, it sometimes disturbs the farming schedule of millions of farmers all over the country.
15. **A.**	**Why does the rainfall decrease from the east to the west in Northern India?** Rainfall decreases from the east to the west in Northern India because there is a decrease in the moisture content of the winds. As the moisture-bearing winds of the Bay of Bengal branch of the southwest monsoon move further and further inland, the moisture gradually decreases

	and results in low rainfall when moving westwards. Consequently, states like Gujarat and Rajasthan in western India get very little rainfall.
16.	**Mawsynram receives the highest rainfall. Give reasons.**
A.	Mawsynram lies in the funnel shaped depression caused by the Khasi range in Meghalaya. The Bay of Bengal branch of monsoons is trapped in it and causes heavy rainfall.
17.	**Some parts of Rajasthan, Gujarat, and the leeward side of the Western Ghats are drought-prone. Give reasons?**
A.	Parts of Rajasthan, Gujarat and the leeward side of the Western Ghats are drought-prone due to the following reasons: • The Aravallis do not obstruct the Monsoon winds due to their parallel alignment to the winds and low heights of Aravalli. • The Arabian sea branch of the monsoon enters the Indian subcontinent from the western coast and brings heavy rainfall on windward side of Western Ghats. The leeward side gets very little rainfall as it falls in rain shadow area. • The Bay of Bengal branch of the monsoon gradually sheds its moisture as it moves from east to west. By the time it reaches Rajasthan and Gujarat which are located in the northwestern part of the country, it doesn't have much moisture left to cause adequate rainfall.
18.	**What is 'October Heat'?**
A.	• The months of October and November are a period of transition from hot rainy season to dry winter condition. • Due to this temperature falls and the pressure rises. • The increase in pressure is marked by clear skies and rise in temperature. But the land is still moist. • Due to high temperature conditions and humidity, the weather becomes oppressive. We perspire and feel uneasy. This is known as October Heat.
19.	**What are the characteristic features of the retreating monsoon?**
A.	• October to November. • The monsoon trough of low pressure becomes weaker and is replaced by high pressure. • High temperatures and humidity, weather becomes oppressive due to October heat. • Tropical cyclones, originating in the Bay of Bengal, hit the eastern coast of India and cause heavy rainfall. • Coromandel Coast receives the bulk of its rains in this season.
20.	**The deltas of the Godavari, Krishna and Cauvery/eastern coast are struck by cyclones frequently. Why?**
A.	The shift of the low-pressure area from north- western India to the Bay of Bengal in the retreating monsoon season, leads to the formation of tropical cyclones in the latter. They move out and strike the eastern coast of the southern peninsula.
21.	**Seasonal reversal of the wind direction takes place over the Indian subcontinent. Why?**
A.	• India lies in the belt of the north-east trade winds. • With the apparent northward movement of the sun, temperature rises over the subcontinent. An intense low-pressure area develops over the dry north-western part of the country by May. • The trade winds from the southern hemisphere are attracted towards it. They cross the equator and blowing over the Indian Ocean reach India as the south-west Monsoon winds. • These moisture laden winds replace the north-east trade winds in the summer.

22.	**Discuss the unifying role of the monsoons in India.**
A.	• The Himalayas protect the sub-continent from extremely cold winds and enables northern India to have uniformly high temperature. • The peninsular plateau under the influence of the sea has moderate temperature. • The seasonal alternation of wind systems and weather conditions provide a rhythmic cycle of seasons. • The Indian landscape, its animal and plant life, its entire agricultural calendar and the life of the people, including their festivities revolve around the phenomena of monsoon. • Year after year, the people of India, from north to south and from east to west eagerly await the arrival of the monsoon despite its uncertainties and uneven distribution of rainfall. • Monsoon winds bind the whole country by providing water to set agricultural activities in motion. • River valleys which carry water also unite as a single river valley unit.