INDIAN SCHOOL AL WADI AL KABIR

Class: IX	Department: : SOCIAL SCIENCE	Date of submission:
Question Bank No.: 4	Topic: Climate Chapter 4 (Geography)	Note:2020-21

1.	**Define weather and climate.**
A.	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.	**What are the elements of weather and climate?**
A.	The elements of weather and climate are – temperature, atmospheric pressure, wind, cloud and precipitation.
3.	**What do you understand by the word 'monsoon'? Where is it mainly found?**
A.	• 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. • It is mainly found in South and South-east Asia.
4.	**India has diverse climatic conditions. Explain this statement. *(H.Q.)***
A.	• In summer, Rajasthan may record 50°C whereas; it may about 20°C in Jammu and Kashmir. • In winter, Jammu and Kashmir may record -45°C. On the other hand Thiruvananthapuram may have 20°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 of the country receives rainfall from June to September excepting Tamil Nadu and the northern part of the country, which receives rainfall during October and November.
5.	**What are the factors affecting the climate of a place?**
	• **Latitude –** Due to the curvature of the earth, the amount of solar energy received varies according to latitude. As a result, air temperature decreases from the equator towards the poles. • **Altitude –** As one goes from the surface of the earth to higher altitudes, the atmosphere becomes less dense and temperature decreases. The hills are therefore cooler during summers. • **Pressure and wind System –** The pressure and wind system of any area depend on the latitude and altitude of the place. Thus it influences the temperature and rainfall pattern. • **Distance from the sea –** The Sea exerts a moderating influence on climate: As the distance from the sea increases, its moderating influence decreases and the people experience extreme weather conditions. This condition is known as continentality (i.e. very hot during summers and very cold during winters).

	• **Ocean currents –** Ocean currents along with onshore winds affect the climate of the coastal areas, For example, any coastal area with warm or cold currents flowing past it, will be warmed or cooled if the winds are onshore. • **Relief –** Relief too 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. The leeward side of mountains remains dry.
6.	**How does latitude and distance from the sea affect the climate of India? *(C.B.S.E.)***
A.	• The Tropic of Cancer divides the country into almost 2 equal parts. Its southern part has tropical and northern part has sub-tropical conditions. • India lies at the head of the Indian Ocean. Due to the triangular shape of the peninsular plateau, the moderating influence of the surrounding ocean and seas extends over a large area. The northern plains being away from the sea are somewhat continental in nature, while the coastal plains enjoy an equable climate.
7.	**What are north-east trade winds and what is its impact on the climate of India?**
A.	• Winds originating from the sub-tropical high pressure belt of the northern hemisphere and blowing towards the equatorial low pressure belt. They blow from the north-east to south-west direction. • The north-east trade winds make the winter season cold and dry for most parts of the country as they blow from land to sea (off- shore winds). The coast of Tamil Nadu gets most of its rain from these winds which pick up moisture from the Bay of Bengal and shed along this region when they blow from sea to land (on-shore winds).
8.	**Why does India have a monsoon type of climate?**
A.	India has monsoon type of climate because of strong influence of the monsoon winds on the Indian Subcontinent. The summer monsoon cause 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. There is a seasonal reversal of the wind system 'monsoon'.
9.	**What are jet streams? How do they affect the climate of India?**
A.	Jet streams are fast blowing winds of steady velocity moving in a narrow zone of the upper atmosphere. Their speed varies from 110km/hrs.in summer to 184 km/hrs. in winter. There are two branches of subtropical jet streams. • The westerly jet stream brings in western disturbances to north-west India. They provide valuable rainfall or moisture for the Rabi crops in winter. • The easterly jet stream blows over southern India in summer. It is responsible for bringing in the tropical cyclones.
10	**What are western disturbances?**
A.	• The low pressure systems originating from the east of the Mediterranean Sea and Western Asia brought to north-west India by the westerly jet streams. • Cause valuable winter rainfall over the plains for Rabi crops and snowfall in the Himalayas.
11.	**Describe the general weather conditions of the cold weather season.**
A.	• Starts by mid-November in northern India and continues till February. • December and January are the coldest months. • 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 and low humidity and low temperatures.
12.	**Describe the main features of the hot weather season.**
A.	• It is experienced from March to May. • March has the highest temperature of 38°C in the Deccan, April – Gujarat and Madhya Pradesh - 42°C, May north-western part of India - 45°C. • As a result of intense heating, a low pressure area (a monsoon trough) is developed mainly in the north-western part of India by the end of May. It extends from the Thar Desert to Patna and Chotanagpur Plateau. • "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. • Locally formed thunderstorms associated with violent winds, torrential downpour accompanied by hail stones, known as Kalbaisakhi in West Bengal. • Pre-monsoon showers, locally called 'mango-showers', are a common phenomenon in Kerala and Karnataka. They help in the early ripening of mangoes.
13.	**How are the 'breaks' in monsoon rainfall explained?**
A.	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.
14.	**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.
15.	**Explain the progress of the advancing monsoon in India along with its characteristic features.**
A.	• 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 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. • Another part of the Arabian Sea branch strikes the Saurashtra Peninsula and Kutch and passes over Rajasthan, Punjab and Haryana and joins the Bay of Bengal Branch. • The Bay of Bengal branch strikes the north-eastern parts of the country, causing heavy rainfall in the region. • The lofty mountains cause the winds to deflect towards the west over the Ganga Plains. • The alternation of dry and wet spells due to the variation of intensity, frequency and duration of the tropical depressions cause floods in one and droughts in the other. • These winds irregular and unpunctual in their arrival as well as retreat.
16.	**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 associated 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.
17.	**Describe the variations in the form and distribution of precipitation in India**
A.	• The western coast and north-eastern area receives an annual rainfall of over 400 cms. • Western Rajasthan and the adjoining parts of Gujarat, Punjab and Haryana get less than 60 cms. of rainfall. • Rainfall is low in the interior of the Deccan Plateau, east Sahyadris and Leh. • Snowfall in the mountainous regions of the Himalayas. Rest of the country receives moderate rainfall.
18.	**Mawsynram receives the highest rainfall. Why?**
A.	• Located on the crest of the southern range of Khasi Hills. • The Bay of Bengal Branch of the south-west monsoons strikes this region directly from the south. • The moisture laden winds rise and cause heavy rainfall.
19.	**What are the characteristic features of the retreating monsoons?**
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 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.	**Parts of Rajasthan, Gujarat, and the leeward side of the Western Ghats are drought- prone. Why?**
A.	Parts of Rajasthan, Gujarat and the leeward side of the Western Ghats are drought-prone because of the scanty rainfall received by these regions during the monsoon rains:- • Aravallis running parallel to Arabian Sea branch, provide no barrier. The Arabian Sea branch passes over Gujarat and Rajasthan unchecked by the relief features. • The progressive decrease in the humidity of the winds of the Bay of Bengal branch causes the amount of rainfall to decrease from east to west in northern India. **Leeward side of the Western Ghats** • As the leeward side is the rain-shadow area, the regions lying in this region receive very little rain from the Arabian Sea branch. It is the windward side of the Ghats that receives the maximum rain.
22.	**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. • By this time the Inter Tropical Convergence Zone (ITCZ) has also moved northwards from its original position parallel to the equator to northern India.
23.	**How does ENSO affect the Indian Monsoons?**
A.	• In normal circumstances, when the tropical eastern South Pacific Ocean experiences high pressure, the tropical eastern Indian Ocean experiences low pressure. Such changes in the pressure conditions over the southern oceans also affect the monsoon. • But in certain years, there is a reversal in the pressure conditions. In this case, the eastern Pacific Ocean has lower pressure compared to the eastern Indian Ocean. • This periodic change in pressure conditions is known as the Southern Oscillation or SO. • The difference in pressure over Tahiti and Darwin is computed to predict the intensity of the monsoons. Tahiti (18°S/149°W) lies in the Pacific Ocean and Darwin (12°30'S/131°E) lies in northern Australia. If the pressure differences are negative, it means a below average and late monsoon.