Climate

Q1. Choose the correct answer from the four alternatives given below.
(i) Which one of the following places receives the highest rainfall in the world?

(a) Silchar
(b) Mawsynram
(c) Cherrapunji
(d) Guwahati

Answer: Mawsynram

(ii) The wind blowing in the northern plains in summers is known as:

(a) Kaal Baisakhi
(b) Loo
(c) Trade Winds
(d) None of the above

Answer: Loo

(iii) Which one of the following causes rainfall during winters in the north-western part of India?

(a) Cyclonic depression
(b) Retreating monsoon
(c) Western disturbances
(d) Southwest monsoon

Answer: Cyclonic Depression

(iv) Monsoon arrives in India approximately in:

(a) Early May
(b) Early July
(c) Early June
(d) Early August

Answer: Early June

(v) Which one of the following characterises the cold-weather season in India?

(a) Warm days and warm nights
(b) Warm days and cold nights
(c) Cool days and cold nights
(d) Cold days and warm nights

Answer: Cool days and cold nights.

Q2. Answer the following questions briefly.
(i) What are the factors affecting the climate of India?

Answer: The factors controlling the climate of India are

1. Humidity
2. Wind
3. Temperature
4. Atmospheric Pressure
5. Precipitation

(ii) Why does India have a monsoon type of climate?

Answer: There are various reasons why India has a monsoon type of climate.

1. Inter Tropical Convergence Zone
2. El Nino
3. Jet Stream
4. Coriolois

(iii) Which part of India does experience the highest diurnal range of temperature and why?

Answer: The north-western part of India experiences the highest range of temperature. This is due to the presence of the Thar Desert and also because the sea does not have a moderate impact in the region.

(iv) Which winds account for rainfall along the Malabar Coast?
Answer: The Malabar Coast receives rains from Southwest monsoon wind.

(v) What are Jet streams and how do they affect the climate of India?
Answer: Jet streams are high-velocity moving winds flowing through a narrow region in the high troposphere. Their speed varies from about 110 km/h in summer to about 184 km/h in winter. Several different jet streams have been identified. The most stable is the mid-latitude and subtropical jet stream. They cause depression during the monsoon season.

(vi) Define monsoons. What do you understand by "break" in monsoon?
Answer: Monsoon means the seasonal reversal in wind direction during a year. Monsoon break means, a wet and dry spells during the rainy season. Monsoon rainfall occurs only once for a few days.

(vii) Why is the monsoon considered a unifying bond?
Answer: Although there are wide variations in weather patterns across India, the monsoon has some impact on India. The Indian landscape, its flora and fauna, etc. are highly influenced by the monsoon. The entire agricultural calendar in India is governed by the monsoon. Most of the festivals in India are related to the agricultural cycle. These festivals can be known by different names in different parts of the country, but their festival is decided by the monsoon.

Q3. Why does the rainfall decrease from the east to the west in Northern India?
Answer: The Bay of Bengal of the monsoon winds moves towards the northeast and returns west covering the northern plains. When they move west, their moisture decreases with subsequent rains. Hence rainfall decreases from east to west in North India.

Q4. Give reasons as to why.

(i) Seasonal reversal of wind direction takes place over the Indian subcontinent?
Answer: Seasonal vicissitudes of wind direction on the Indian subcontinent are caused by pressure differences. El Niño plays a major role in the seasonal vicissitudes of wind direction in the Indian subcontinent.

(ii) The bulk of rainfall in India is concentrated over a few months.
Answer: The monsoon starts from the first week of June and moves fast enough to cover almost the entire country by mid-July. Therefore, the bulk of rainfall in India is concentrated in a few months of months; Mainly June to August.

(iii) The Tamil Nadu coast receives winter rainfall.
Answer: The winter rainfall occurs due to the movement of low pressure conditions in the Bay of Bengal on the Tamil Nadu coast.

(iv) The delta region of the eastern coast is frequently struck by cyclones.
Answer: The Bay of Bengal is the centre of various pressure changes and hence there is always a chance for cyclones to develop. Due to this, the delta region of the east coast is often affected by cyclones.

(v) Parts of Rajasthan, Gujarat and the leeward side of the Western Ghats are drought-prone.
Answer: These parts fall in the rain shadow region of Aravali. Therefore, they are drought prone and do not rain much.

Q5. Describe the regional variations in the climatic conditions of India with the help of suitable examples

Answer: There is regional variation in the climatic conditions of India. The temperature varies from place to place and season to season. In summer, the temperature rises to 50 ° C in parts of Rajasthan, while in Pahalgam, Kashmir it can be up to about 20 ° C.
In the Andaman Islands, the difference in day and night temperature is hardly 7 ° –8 ° C.
Coastal regions experience less contrast in temperature, while seasonal contrasts are greater in the interiors of the country.
Most parts of India receive rain since June, while the Coromandel Coast receives rain in the winter season.

Q6. Discuss the mechanisms of the monsoon.

Answer:

1. Due to the sun, the difference between heating of land and water.
2. During summer, ITCZ shifts in the Gangetic plains.
3. The high-pressure area east of Madagascar affects the monsoon.
4. Due to strong vertical wind currents and the formation of high pressures on the Tibetan plateau, the plateau becomes intensely hot during summer.
5. Southern oscillations affect the monsoon.

Q7. Give an account of weather conditions and characteristics of the cold season.

Answer: Following are the characteristics of cold weather:

1. In northern India, the winter season starts from mid-November and up to February.
2. December and January are the coldest weather in the northern part of India.
3. Temperatures in the northern plains range between 10 ° –15 ° C, while in Chennai it remains between 24 ° –25 ° C.
4. The weather is usually marked by a clear sky, low temperature and low humidity and weak variable winds.
5. The flow of cyclonic disturbances from the west and northwest is a feature of the cold weather over the northern plains.
6. Winter rains occur in small amounts but are very important for the rabi crop. This rainfall is locally known as Mahavat.

Q8. Give the characteristics and effects of the monsoon rainfall in India.

Answer: *Characteristics of Monsoon Rainfall in India are as below*:

1. The monsoon period ranges from 100 to 120 days from early June to mid-September.
2. Around the time of its arrival, normal rainfall suddenly increases and continues regularly for several days. This is called the 'burst' of the monsoon.
3. They are different by pre-monsoon rainfall due to increase in rainfall volume and regularity.
4. The monsoon arrives at the southern tip of the Indian peninsular, usually by the first week of June.

Effects of Monsoon Rainfall in India are:

1. Agriculture in India depends largely on the Indian monsoon for water. Late, low or excessive rainfall has a negative effect on crops.
2. Due to uneven distribution of rainfall across the country, there are some places which are drought prone and some are flood affected.
3. The monsoon provides India with varied climatic patterns. Therefore, despite the presence of great regional variations, it has an impact on the country and its people.