CLIMATE

Q.1 Define Climate. What are the elements of climate?

Ans:i. Climate refers to the sum of total weather conditions and their variations over a large area for a long period of time (more than thirty years).

ii. The elements of weather and climate are the same i.e. temperature, atmospheric pressure, wind, humidity and precipitation.

Q.2 What are the controlling elements of the climate of India?

Ans: India’s climate is controlled by latitude, altitude, pressure and winds, distance from the sea, ocean currents and physiography.

Q.3 Discuss the unifying role of the Indian monsoon.

Ans: There is great diversity of the climatic conditions in India due to different locations and land relief patterns. But these diversities are subdued by the monsoon, which blow over the whole country. The arrival of the monsoon is welcomed all over the country.

1. Several festivals are celebrated welcoming the monsoonal rainfall in India.

2. The monsoonal rainfall provides water for agricultural activities.

3. Monsoon gives relief from the scorching heat. The entire life of the Indian people revolves around the monsoon.

Q.4 Distinguish between weather and Climate.

Ans

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| WEATHER | CLIMATE |
| i. Weather refers to the state of theatmosphere at any point of time and place. | i. Climate refers to the sum of total weather conditionsand variations over an area for a long period of time.(more than 30 years). |
| ii. Weather conditions may vary at intervals of a few hours or a few days. | ii. Climate does not change so frequently. |
| iii. Weather data are the observations recorded at a specific time. | iii. Climate refers to the average value of several elements of weather, relating to a period of more than 30 years. |

Q.5 Give three characteristics of monsoonal rainfall in India.

Ans Characteristics of monsoon rainfall are:-

i. Early in the season, the windward side of the Western Ghats receives heavy rainfall i.e. more than 250 cm.

ii. The rain shadow areas of Deccan Plateau and parts of Madhya Pradesh receive scanty rainfall. The maximum rainfall is recorded in the north eastern part of the country.

iii. The frequency and intensity of tropical depressions determine the amount and duration of monsoon rains.

Q.6 What is El Nino? Mention any of its two effects.

Ans: El Nino is a warm ocean current that flows over Peru in an interval of two to five years. The term El Nino,derived from Spanish, means ‘the child’, i.e. baby Christ. It flows in the month of December.

Its effects are :-

i.Surface temperature in sea is increased.

ii. Trade winds in the region are weakened.

Q.7. What are the six controlling elements of the climate of India?

Ans: India’s climate is controlled by

1. Latitude 2. Altitude 3. Pressure and winds 4. Distance from the sea 5. Ocean currents 6. Physiography

Q.8. What is a monsoon?

Ans The term Monsoon is derived from the Arabic word ‘mausim’, meaning season, applied by the Arabs to the seasonal winds of the Arabian Sea. Monsoon winds mean a complete reversal in the direction of wind over a large part of the land, causing seasons.

Q.9. What do you understand by the term ‘burst of monsoon’? What are the two branches of Indian monsoon?

Ans. Around the time of the arrival of the monsoons, the normal rainfall increases suddenly and continues constantly for several days. This is known as the ‘burst of the monsoon’

Monsoon gets divided into two branches–

(i) The Arabian Sea branch: The Arabian Sea branch reaches Mumbai, as the name suggests it strikes India from Arabian Sea side.

(ii) The Bay of Bengal branch: The Bay of Bengal branch also advances rapidly and arrives in Assam in the first week of June. This branch is responsible for giving Meghalaya the highest rainfall in the world.

Long Answer Questions (5 Marks)

Q.1 Discuss the mechanisms of the Indian monsoons.

Ans The mechanism of Indian Monsoons:-

(i) The different heating and cooling of land and water: At the end of May, due to high temperature, low pressure is created on the landmass of India while seas around experience comparatively high pressure. It fixes the direction of the moisture laden wind from sea to land.

(ii) The shift of the position of Inter Tropical Convergence Zone (ITCZ) : In summer, low pressure trough is positioned over the Ganga plain, making the region suitable for the occurrence of rain.

(iii) The intensity and position of the high atmospheric pressure over the Indian Ocean affects the Indian monsoon.

(iv)The Tibetan plateau gets intensely heated during summer which results in strong vertical air currents and formation of high pressure over the plateau at about 9km above the sea level.

(v) The movements of the westerly Jet Streams to the north of the Himalayas and the presence of the tropical easterly Jet Streams over the Indian Peninsula during the summer affects monsoon.

Q.2 Distinguish between South-west monsoon and North-east monsoon.

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| **South-West Monsoon** | **North-East Monsoon** |
| i) The season is from June to September. | i) This season starts from December and ends in February. |
| ii) It does not rain continuously. There are rainless intervals in this season. | ii) It does not possess any rainless intervals. |
| iii) It blows in India in two branches namely the Arabian Sea branch and Bay of Bengal branch. | iii) It does not have any branches. |
| iv) Major portion of annual rainfall in India is due to this type of monsoon. | iv) Minor portion of the annual rainfall in India is due to this type of monsoon. |