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NCERT Solutions for 9th Class Geography : Chapter 4-Climate



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NCERT Solutions for 9th Class Geography : Chapter 4-Climate

Class 9: Geography Chapter 4 solutions. Complete Class 9 Geography Chapter 4 Notes.

NCERT Solutions for 9th Class Geography : Chapter 4-Climate

NCERT 9th Geography Chapter 4, class 9 Geography chapter 4 solutions

Page No: 27

1. Find out why the houses in Rajasthan have thick walls and flat roofs.

Answer

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Houses in Rajasthan have thick walls and flat roofs. The thick walls do not allow the heat to get into the houses while the flat roofs help to retain the little water that comes as rain in the desert.

2. Find out why is it that the houses in the Tarai region and in Goa and Mangalore have sloping roofs.

Answer

The Tarai region, Goa and Mangalore receive heavy rains during monsoon seasons thus the houses have sloping roofs so that the rainwater flows off the roof.

3. Why are houses in Assam built on stilts?

Answer

The houses are built on stilts in Assam as there is danger of floods and wild animals in large areas of Assam.

4. Why most of the world's deserts are located in the western margins of continents in the subtropics?

Answer

Most of the world's deserts are located in the western margins of continents in the subtropics because trade winds that blow in the region shed their moisture on the eastern side. They become dry by the time they reach the western margin of the continent. Cold ocean currents also tend to stabilise the air over the coast and inhibit cloud formation.

Page No: 39

Exercise

1. Choose the right answer from the four alternatives given below :

(i) Which of the following places receives the highest rainfall ?

(a) Guwahati

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(b) Mawsynram

(c) Kolkata

(d) None of these

► (b) Mawsynram

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

(a) Kaalbaisakhi

(b) Loo

(c) Trade winds

(d) None of the above

► (b) Loo

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

(a) Cyclonic depression

(b) Retreating monsoon

(c) Western disturbances

(d) Southwest monsoon

► (a) Cyclonic depression

(iv) Monsoon arrives in India approximately in:

(a) Early May

(b) Early July

(c) Early June

(d) Early August

► (c) Early June

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(v) Which one of the following characterises the cold weather 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

► (b) Warm days and cold nights

2. Answer the following questions briefly.

(i) What are the controls affecting the climate of India?

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

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

(iv) Which winds account for rainfall along the Malabar coast?

(v) What are Jet streams and how do they affect the climate of India?

(vi) Define monsoons. What do you understand by “break” in monsoon?

(vii) Why is the monsoon considered a unifying bond?

Answer

(i) The elements affecting the climate are Latitude, Altitude and Pressure & Winds, distance from the sea (continentality), ocean currents and relief features.

(ii) India have a monsoon type of climate because the climate of India is governed by the monsoon winds which are limited between 20° North and 20° South.

(iii) The Indian desert located in the north-western part of India experience the highest diurnal range of temperature because of the sand present there quickly becomes hot during day and cools down rapidly during night.

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(iv) Malabar Coast gets rains from South-West Monsoon Winds.

(v) Jet streams are high velocity westerly winds blowing through a narrow zone in the upper troposphere. The westerly flows are responsible for the western disturbances experienced in the north and north-western parts of the country. The easterly jet streams cause tropical depressions during the monsoon as well as October-November months.

(vi) Monsoon refers to the seasonal reversal in the wind direction. Monsoon 'break' refers to the happening of wet and dry spells during the rainy season. The monsoon rains take place only for a few days at a time.

(vii) The monsoon is considered a unifying bond because:

→ The Indian landscape, its flora and fauna, etc. are highly influenced by the monsoon.

→ These monsoon winds bind the whole country by providing water for agricultural activities

→ Most of the festivals in India that are related to agricultural cycle may be known by different names in different parts of the country, but their celebration is decided by the monsoon.

→ Year after year, people of India from north to south and from east to west, eagerly await the arrival of the monsoon.

→ The river valleys which carry this water also unite as a single river valley unit.

3. Why does the rainfall decrease from the east to the west in Northern India.

Answer

The Bay of Bengal branch of south-west monsoon moves towards northeast carrying more moisture and they give heavy rainfall in this region. As they move further towards west, they carry less moisture content with themselves resulting in decrease in rainfall in the west.

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4. Give reasons as to why :

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- (i) **Seasonal reversal of wind direction takes place over the Indian subcontinent.**
- (ii) **The bulk of rainfall in India is concentrated over a few months.**
- (iii) **The Tamil Nadu coast receives winter rainfall.**
- (iv) **The delta region of the eastern coast is frequently struck by cyclones.**
- (v) **Parts of Rajasthan, Gujarat and the leeward side of the Western Ghats are drought-prone.**

Answer

- (i) Seasonal reversal of wind direction over the Indian subcontinent takes place due to pressure differential. El Nino has major role to play in the seasonal reversal of wind direction over the Indian subcontinent.
- (ii) The monsoon begins from the first week of June and advances quite rapidly to cover almost the whole country by mid-July. Hence, the bulk of rainfall in India concentrated over the months of a few months; mainly June to August.
- (iii) The Tami Nadu coast receives winter rainfall because of movement of low-pressure conditions to the Bay of Bengal.
- (iv) The Bay of Bengal is the centre of various pressure changes and hence there is always a chance of development of cyclone. Due to this, the delta region of the eastern coast is frequently struck by cyclones.
- (v) The parts fall in the rain shadow area of the Aravalli. Hence, they are drought prone as they don't receive much of rainfall.

5. 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. Temperature and Precipitation vary from place to place and season to season.

→ In summers the temperature rises up to 50°C in parts of Rajasthan, whereas it may be around 20°C in Pahalgam in Kashmir.

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→ In winters night temperature in Drass in Kashmir may be minus 45°C , whereas in Tiruvananthapuram in Kerala may have a temperature of 20°C .

→ In Andaman Islands the difference between day and night temperature may be hardly $7^{\circ} - 8^{\circ}\text{C}$.

→ Coastal areas experience less contrast in the temperature, whereas seasonal contrasts are more in the interior of the country.

→ There is decrease in rainfall generally from east to west in the northern plains.

→ Most part of India receive rainfall from June – September, whereas some parts like the Tamil Nadu coast gets a large portion of its rain during October and November.

6. Discuss the mechanism of monsoons.

Answer

Following are the factors responsible for the mechanism of monsoon:

→ The differential heating and cooling of land and water creates low pressure on the landmass of India while the seas around experience comparatively high pressure.

→ The Inter Tropical Convergence Zone (ITCZ) is normally positioned about 5°N of the equator. It shifts over the Ganga plains during summer. It is also known as the monsoon trough during the monsoon season.

→ The high pressure area, east of Madagascar is approximately 20°S over the Indian Ocean. This area affects the Indian Monsoon.

→ The Tibetan plateau gets intensely heated during summer. This results in strong vertical air currents and formation of high pressure over the plateau. This high pressure zone is about 9 km above the sea level.

→ The westerly jet stream move to the north of the Himalayas, and the tropical easterly jet stream moves over the Indian Peninsula during summer.

→ The periodic change in pressure conditions between Pacific Ocean and the Indian Ocean that is known as the Southern Oscillation or SO also affects the monsoon.

→ The difference in pressure over Tahiti and Darwin is computed to predict the intensity of the monsoons. Tahiti ($18^{\circ}\text{S}/149^{\circ}\text{W}$) lies in the Pacific Ocean and Darwin

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(12°30'S/131°E) lies in northern Australia. If the pressure differences are negative, it means a below average and late monsoon.

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

Answer

Following are the features of the cold season:

→ The winter season begins from mid-November and till February; in northern India.

→ December and January are the coldest months in the northern part of India.

→ The temperature ranges between 10°-15°C in the northern plains, while it ranges between 24°-25°C in Chennai.

→ Days are warm and nights are cold.

→ Frost is common in the north and the higher slopes of the Himalayas experience snowfall.

→ The northeast trade winds prevail over the country in this season. As these winds blow from land to sea, most parts of the country experience a dry season.

→ The weather is usually marked by clear sky, low temperatures and low humidity and weak variable winds.

→ The inflow of the cyclonic disturbances from the west and the northwest is a characteristic feature of the cold weather over the northern plains.

→ These low-pressure systems originate over the Mediterranean Sea and Western Asia and move into India. They cause winter rains over the plains and snowfall in the mountains.

→ The winter rainfall is in small amount but is very important for the rabi crop. This rainfall is locally known as mahawat.

→ The peninsular region does not have a well- defined cold season due to the moderating influence of the sea.

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

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Answer

Characteristics of the monsoon rainfall in India:

→ The duration of the monsoon varies from 100 to 120 days from early June to mid-September.

→ Around the time of its arrival, the normal rainfall increase suddenly and continues regularly for several days. This is called the 'burst' of the monsoon.

→ They are distinguished from the pre-monsoon showers because of their increase in rainfall amount and regularity.

→ The monsoon arrives at the southern tip of the Indian Peninsular generally by the first week of June.

→ The rainfall is unevenly distributed across the country.

Effects of the monsoon rainfall in India:

→ Agriculture in India largely depends on Indian monsoons for water. Late, Low or excessive rains have a negative impact on crops.

→ Due to uneven distribution of rainfall across the country, there are few places that are drought prone and few are flood affected.

→ The monsoon provides India with a diverse climatic pattern. Hence, in spite of the presence of great regional variations, it has a unifying influence upon the country and its people.

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Map Skills

On an outline map of India, show the following.

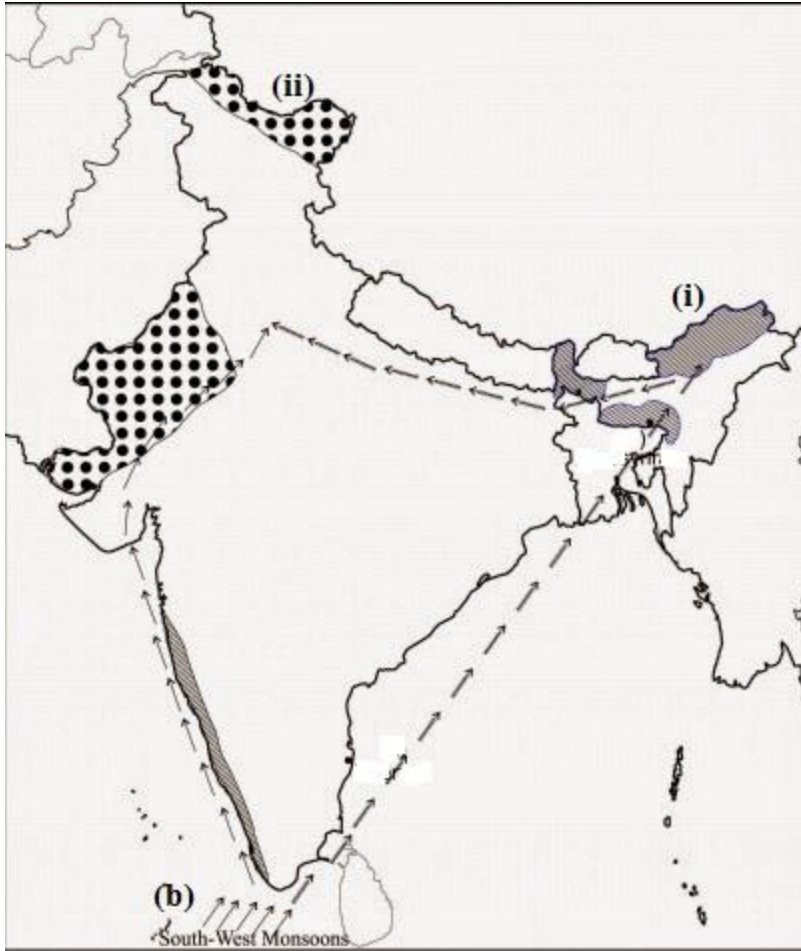
(i) Areas receiving rainfall over 400 cm.

(ii) Areas receiving less than 20 cm of rainfall.

(iii) The direction of the south-west monsoon over India.

Answer

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Chapterwise NCERT Solutions for Class 9 Geography :

- Chapter 1 India–Size and Location
- Chapter 2 Physical Features of India
- Chapter 3 Drainage
- Chapter 4 Climate
- Chapter 5 Natural Vegetation and Wildlife
- Chapter 6 Population

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