

1. FIELD VISIT



Rahul is going on a field visit with his classmates and school teachers from Naldurg in Osmanabad district to Alibag in Raigad district. The school has engaged a special bus from State Transport for this purpose. Rahul and his classmates have organized this visit under their teachers' guidance. Let's find out how the students are experiencing the changes occurring in the relief, soil, vegetation and human settlements as they travel from Naldurg to Alibag.

Go through the following conversation between the teachers and the students.

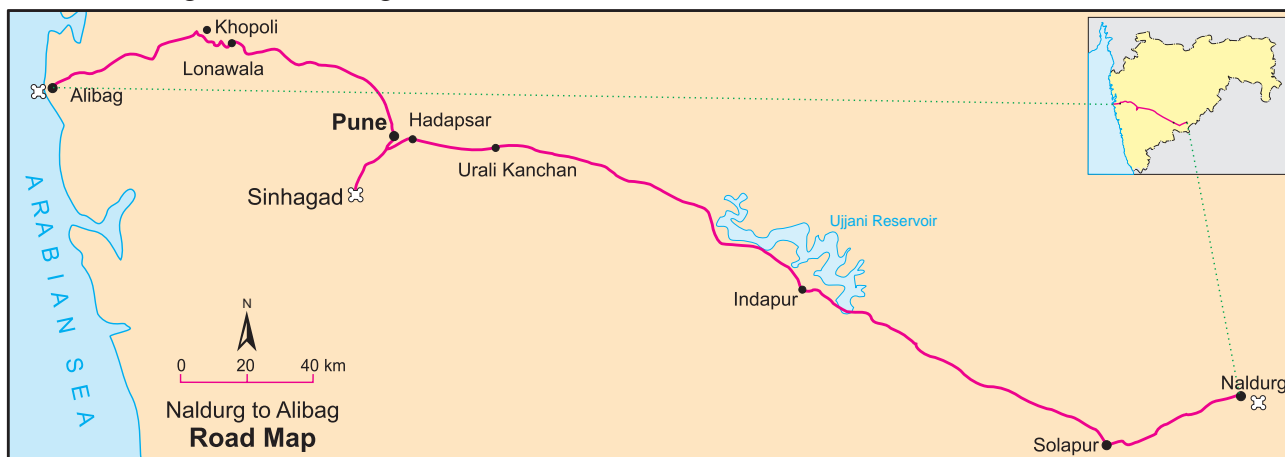


Figure 1.1 : The route of field visit

Besides personal luggage and I-Cards, students are carrying the following items with them.



Figure 1.2 : Items required for field visit

DAY 1- 06:00 hours.

Teacher : Dear students, now we have left Naldurg and are on our way to Solapur. We will have our breakfast at Solapur and lunch near Sinhgad, Pune. Now all of you should observe both the sides along the roads and note down observations in notebooks with reference to these points:

- relief • water bodies • vegetation • soil,
- agriculture • human settlement • settlement patterns.

Rahul : Yes, Madam. I can see that we are experiencing undulating topography and somewhere in between we can find plains. We can also see some agricultural fields.



Discuss

- If you were a part of this field visit, what preparations would you make?
- Suppose teachers ask you to plan the visit. How will you plan the details of the trip?



Figure 1.3 : Nar-Madi Waterfalls at Naldurg

Sakshi : We can see small settlements along the roads. We can also see tea stalls, *dhaabas*, petrol pumps and other shops.

Teacher : Yes Meena, your observations!

Meena : Madam, are we going down the slope?

Teacher : Correct! Now we are in the southern part of the Balaghat Ranges. They are the eastern off-shoots of the Sahyadris. Keep looking at the map given to you and the topography outside. You can easily see the changes occurring in the landscape. Now, tell me about the settlement patterns and housing types.

Suraj : Madam, in rural areas, we see houses in a straight line along the road. The walls of the houses are made of clay while use of mud and wood is visible in making the roofs.

Renuka : In this area, we can mainly see dry grass. Trees which have shed their leaves are visible in some places.

Teacher : Good observation, Suraj and Renuka ! Such settlements are called 'linear settlements'. We have learnt that in seventh standard. The houses which you saw are called mud and wood houses (*dhabyaachee ghare*). These are the traditional houses built by a specific method. The vegetation here belongs to the dry deciduous type. They shed their leaves during a specific season.

(After some time, they reach Solapur city)

Teacher : Now we have reached Solapur city. In urban areas, the population density is high. We see multi-storeyed houses. They are made from a mixture of cement, sand, rubble and water. They are constructed using bricks. Shops with modern amenities like shopping malls, big restaurants, etc. are found along the roads.

(Students started observing the distinctive characteristics of the urban area. After sometime, the teachers asked Rahul to distribute the breakfast packets among the students. They had their breakfasts.)

Teacher : Now we are crossing Solapur city. Dear students, see the cultivation around. What do you see? Observe and tell.

(Children observed on both sides of the road and started writing down their observations in their notebooks. This continued for a long time.)

Savitri : Madam, I find that the fields are greener here. When we had left Naldurg, we had seen shrub crops and there was



Figure 1.4 : Mud and wood houses (*dhabyachi ghare*)



Figure 1.5 : Roads and shops

- What precautions will you take continuously during the field visit?



Figure 1.6 : Vegetation of the semi-arid region

- Collect more information about mud and wood houses (*dhabyaachee ghare*) .



Figure 1.7 : Cultivation of pulses

- Correlate pulse cropping with low rainfall.

some sugarcane but now I can see that it is mainly sugarcane being cultivated here.

Teacher : Correct! When we had left Naldurg, we had seen cultivation of *moog*, *urad* and other pulses but now it is mainly sugarcane. This is because of the availability of irrigation facilities.

Savitri : Yes, madam. We had crossed a canal some time ago and now I can see a large reservoir here. Which is this reservoir, madam?

(Near Indapur, the teachers asked the bus driver to stop at the side of the road. The students got down in a line and gathered around the teachers in a disciplined way)

Teacher : Refer to your maps. As shown there, what you can see to our right are the backwaters of the Ujni dam built on the river Bhima. This dam is mainly used for supplying drinking water. It is also used for power generation, fishing, irrigation, etc. (Some students clicked pictures of the surroundings. They boarded the bus and their journey started again.)

Pooja : Madam, this seems to be a plain area.

Teacher : Yes, we are going through a plain region. This is a part of the Deccan Plateau itself. As we go westwards, we will notice major changes in the relief and vegetation. (After few hours of journey, they left the main road near Hadapsar and turned towards Sinhagad. There were many big and small hotels at the foothills. They stopped at an open space at the roadside and had their lunch. They relaxed for a while.)

Nazma : I also noticed that when we left Naldurg, trees like jujube (bor) and babool, etc. were visible but here different trees are seen.

Teacher : Good ! While crossing Naldurg, we saw semi-arid thorny type of vegetation. Change in type of vegetation is an indicator of change in the amount of rainfall in that area. We see that anjan (ironwood), banyan and peepal trees are more in number here. Alright, now we have reached the foothills of Sinhagad. Now we will climb to the top and you will see the off-shoots of Western Ghats. You will only carry your I-card, notebook, pen, binoculars, camera, cap, map and water bottle. Keep your luggage and other items in the bus itself.

(When they started climbing the Sinhagad fort, it was



Figure 1.8 : Sugarcane Field



Figure 1.9 : Ujni Dam Reservoir

- Obtain information regarding multi-purpose projects.



Figure 1.10 : Types of trees

- ‘Vegetation is an indicator of difference in precipitation’. What are the other indicators of difference in precipitation?

quite sunny at first, then it became cloudy. Later, it also started drizzling and students enjoyed eating steamed groundnuts, buttermilk and curd on the way. They clicked photographs of various physical features, the vegetation around, birds, the aerial view of Pune city and the various structures of the fort. Afterwards, teachers asked them to gather at one place)

Teacher : We have now reached the fort of Sinhagad. How will you collect information about it?

Neha : Madam, we saw a board at the entrance which gave us information about the Sinhagad Fort. We have also clicked its pictures.

Teacher : Good, Neha. Now who will tell the differences in the relief features now?

Qasim : Madam, we can see that now the undulating plains have turned into rugged topography with hills. This is a high hill. We are at a higher altitude and hence can even experience clouds.

Teacher : Very good Qasim! You can notice many physical features like rock pinnacles, valleys and hills and layers formed from volcanic eruption. Have you recognized the rock found here? You might have seen some debris of landslides at places while climbing. Now, tell me about the agricultural pattern around!

Rahul : Madam, this is basalt, an igneous type of rock. We had learnt about it in Class 6.

Mary : We saw mainly pulses being cultivated at the place where we live. Between Solapur to Pune, we saw sugarcane. Now we see mainly paddy fields.

Teacher : Correct. It is because of the good amount of rainfall here. Can you recall seeing a similar fort-like structure before? What difference do you see between both of them?

Wahida : Madam, we can compare this with the Naldurg fort itself. But it is not situated on a hill like Sinhagad. We do not have to climb up a slope to see it.

Teacher : Very good. Now, we have reached the top of the fort. This is a hill fort as it has been built on a hill. This was built with the view of security and to keep an eye on the surroundings. Naldurg is a fort on the land. All such forts are the heritage of our State.

Come here and look down. The water body that you can see in front is the reservoir of the Khadakwasla



Figure 1.11 : Sinhagad Entrance Gate



Figure 1.12 : Rocks (debris)

- How will the terrain below appear to the birds from the sky?



Figure 1.13 : Khadakwasla Dam as seen from Sinhagad

- Out of which process has the plateau of Maharashtra formed ? What is the main type of rock seen here?



Figure 1.14 : Layers of Rocks

dam which serves water to areas in and around Pune. Now we will go to the Kalyan Drawaja (Gate). Come here and see this structure. This is called Devtake. (sacred tank). Water coming from a natural spring gets stored here. Even today it serves water all the year round to the people who stay at the fort above.

All students: (expressing surprise) : Oh my God! How can water be available continuously at this height since centuries?

(The teachers took them to a stall which served *pithla-bhakri*. Students observed that there were many similar stalls. Tourists were being served different food items there. After spending little time at Sinhagad fort, students came down the foothills and boarded the bus. The bus started towards Pune city where they had an overnight halt. In the city, they had evening snacks and tea and got ready to roam in the markets.)

Teacher : We will be visiting places in Pune like Shaniwarwada, and famous market places like Tulsibaug and Mahatma Phule mandai (market). There are wholesale and retail markets here. You can do shopping here. Make sure you write down all your observations.

(After the city-tour they had dinner and returned to the place of their night halt)

DAY 2 - 07:00 hrs

(After breakfast, they proceeded to Alibag)

Teacher : Now, we are on the Mumbai-Pune Expressway. Can you see the change in the relief again? We will stop at Rajmachi point near Lonavala.

Tushar : Yes, madam. Even though we are driving on a plain road, we can see hilly regions all around. The frequency of houses is becoming less.

(After Lonavala, they stopped at Rajmachi point and the teacher gave information about various relief features)

Teacher : These are the slopes of the Western Ghats. We call these hilly areas Sahyadris too. From here you can observe the difference in slopes- the gentle slope to the east and the steep slope to the west. Towards the west, you can see many cliffs and waterfalls about which you have learnt in Class IX. This region is also the source of river Ulhas, a major west-flowing river.



Figure 1.15 : Paddy cultivation

- Gather information about forts. Consider the following points for it- determination of location, period of construction, construction style and security mechanism.



Figure 1.16 : Devtake



Figure 1.17 : Food items at Sinhagad

(The students took photographs of these features, it started raining again and their journey resumed.)

Namdeo : (Looking at the map) Madam. We are crossing the Ghat section and now are we going to Khopoli?

Teacher : Correct Namdeo, This is known as the Bhore or Khandala ghat in the Western Ghats. We will now enter the western coastal plains of India. Observe the trees, soil and houses that you see.

Shiv : Madam, we can see dense forests comprising of thick vegetation in the Ghats. We can see trees with broad leaves. We had seen such trees in the Sinhagad region too.

Teacher : These are the teak trees. This region is a region of deciduous trees. There are many *vanrais* and *devrais*. (woodlands and sacred groves)

(After crossing the Ghats, the dense forest became sparse. Paddy fields and huge industrial estates were now visible.)

Nazma : Madam, I can feel a change in the weather. It is getting hotter and I have started perspiring.

Teacher : You feel the change in the air. Because of increase in humidity in the air, we start perspiring and skin becomes sticky. As we go near the sea, this will increase.

Namdeo : Madam, it has started raining in this region. Also, the amount of rainfall seems to be more. It might be happening because of this.

Teacher : Namdeo, correct observation. Because of heavy rainfall and nearness to the sea, this happens. Also, because of high rainfall, rice is the major crop here.

Soon, we will reach the sea, Can you name the sea?

All students : (together) the Arabian Sea !

Teacher : Good! After reaching Alibag, before we go to our lodges, we will visit the Talathi office. You can gather information on the basis of the questionnaire you have prepared in the school.

Urmi : We will be asking him questions about the types of crops, soil types, cultivation of fruits and other cash crops. We are asking him how land revenue is collected in his/her office, land under irrigation, watershed programmes and other occupations in the village.



Figure 1.18 : Rajmachi

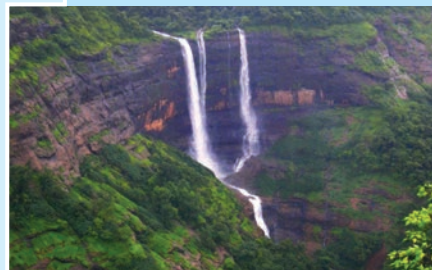


Figure 1.19 : A waterfall in Sahyadris

- Do you agree that regions and necessities influence the difference in the means of livelihood?
- Guess in which season of the year is the field visit being undertaken?



Figure 1.20 : A 'Devrai'.



Figure 1.21 : A Vanrai

(They reached Alibag in the afternoon and then visited the Talathi office. They collected information based on their questionnaires.)

Teacher : Dear students. After lunch , we will go to the sea coast. How many of you will be seeing the sea for the first time?

(Almost all of them raised their hands)

Abeera : I am just trying to imagine what a breathtaking view it would be to see the sea.! What will it look like? Or will there be just water!

Teacher : True, Abeera, we will visit the beach now. We have already given clear instructions regarding precautions to be taken there. We will also visit a fort called Kolaba or Alibag fort here. We will have to take into account the timings of the high and low tides as this is away from the coast in the sea. We have studied the work of sea waves in Class IX. We will also identify some of the landforms formed by sea waves. Can you name some of them?

All children: (almost together) beach.... sea caves...wave-cut platforms, sand bars.....

Teacher : Good! You remember them well.

(They visited the beach and the fort. Some of them also enjoyed sitting on horse-driven chariots and some of them enjoyed horserides.)

Neha : Madam this fort is different from the first two.

Teacher : Good Neha. Can you tell the difference between them?

Neha : Yes, Madam. This fort was constructed in water while other two were on land.

Teacher : Good, this fort is built on a wave-cut platform. Because it is surrounded by sea water, it is called a sea-fort. Earlier, these forts were built for the security of the seas. There are many such forts on the west coast.

Neha : Yes, I have heard names like Sindhudurg, Janjira earlier.

Teacher : Based on the information you have collected, can you tell what occupations are followed here?

Rahul : Madam, fishing and agriculture, both the occupations are followed here.

Teacher : Correct, Rahul! To which category do these occupations belong ?



Figure 1.22 : Teak Trees

- What is the concept of 'Devrai'.



Figure 1.23 : Kolaba Fort

- What precautions have to be taken while going to the sea coast?
- What is the simplest method of understanding the timings of the tides?

Meena : Madam these are primary occupations.

Teacher : True. Initially fishing was the main occupation. Later on, agriculture was also practiced in this region but away from the shore. Coconut, betelnut, jackfruit, banana and some spices are cultivated in the coastal plains. This is horticultural farming. Today, tourism has become an important occupation here.

(Afterwards, students spent some time playing on the sands of the beach and captured beautiful glimpses of the sunset in their cameras. After sunset, they came to their lodges. They discussed important points to compile their field visit report. After returning to their lodge, they had dinner and rested for the night at Alibag. Next day in the morning, they had their breakfasts and left for their return journey.)

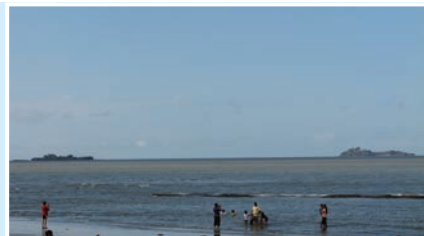


Figure 1.24 : Alibag beach

- What type of photographs will you click with respect to the field visit?
- On the basis of which points will you write the tour report?
- During field visit, how will you obtain various types of information?

- Carry out a similar field visit in your region too.

The above text is a sample of a field visit. Do not ask questions based on this very field visit. However, as per given exercises, field visit related questions can be asked in general.



Exercise

Answer in short :

- (1) Make a report on your field visit.
- (2) Prepare a questionnaire for a field visit to a factory.
- (3) How will you manage the litter during the field visit?
- (4) What items will you take with you for the field visit?
- (5) Outline the importance of field-visit.



Preface :

Friends! Since 6th standard we have been studying 'Geography' as a separate subject as a part of the course 'Social Sciences'. We have been introduced to various concepts, processes and features related to the four spheres of the earth. We have also studied how settlements evolve, how humans have been using the natural resources for their livelihood, how have they processed the raw resources into more usable items, how these goods are traded in local as well as global markets, etc.

Moreover we have been considering the ill-effects of indiscriminate and exploitative utilization of resources in our environment.

To study geography, we need to develop some skills like.

- observation • classification • differentiation
- comparison • Graph, diagrams and map reading
- evaluation • analysis • drawing conclusions
- presentation • Critical thinking

To acquire such skills, we need to study regions using all the geographical concepts and processes we have learnt till now and

achieve the learning outcomes. Through this we can learn the application of geographical knowledge. This year we will study all this with reference to two countries.

This year you will do the revision of all the concepts learnt till now. This study will help you to provide an insight into geography and its application. It will help you to understand natural and man-made events.

By applying geographical concepts, the characteristics of the region will be understood. We understand how people in the region have adapted to the region. Problems arising due to over-exploitation of resources can be understood. Degradation of environment and measures to be taken against them can be thought about. Looking at the current trends, you can understand the process of changes occurring. You can predict what will happen in the future. It will help you face natural and man-made disasters in a better way. Regional imbalances and the reason for it can be understood and possible remedies can be suggested.

2. LOCATION AND EXTENT



Few hints and the flags of two countries are given below. Using them, identify these two countries. You can easily identify one of them and hope you can easily identify the other too.



Clues-

- The second largest populated country in the world-
- Famous for spices in the world-
- Cricket is a popular sport here-



- Famous for Samba dance-
- Known as the 'coffee pot' of the world-
- Football is a very popular sport here-

Name of the Country : Republic of India

Name of the Capital : New Delhi

Location, extent, and boundaries-

India is located in the northern and eastern hemispheres of the Earth. It is located in the southern part of the Asian continent.

With the help of figure 2.1, find the extent



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of the mainland India. Fill in the degree values in degrees in blank spaces -° 4' N to° 6' N latitudes and between° 7' E to° 25' E longitudes.

Indira Point is the southernmost tip of India. It is located on 6°45' N parallel.

Observe figure 2.1. Identify the countries and water bodies around India and complete the table in your notebook.



Figure 2.1 : India

Directions	Neighbouring Countries/ Seas/Oceans
East	
North	
West	
South	

Name of the Country : Federative Republic of Brazil

Name of the Capital : Brasilia

Location, extent and boundaries :

Some part of Brazil lies in the northern hemisphere while most of it lies in the southern hemisphere. Also, it lies in the western hemisphere in the the northern part of the South American continent.

With the help of figure 2.2, find the extent of the mainland Brazil. Fill in the degree values in blank spaces-° 15' N to° 45' S latitudes and between to° 45' W to° 48' W longitudes.

Observe figure 2.2. Identify Brazil's neighbouring countries and oceans. Fill in the chart given below in your notebook.

Directions	Neighbouring Countries/Oceans
North	
West	
South	
East	



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Figure 2.2 : Brazil

Historical Background: India

India was under the British rule for almost one-and-a-half century. India got its independence in the year 1947. Despite facing several problems like three wars, famine situations in various parts and similar issues after independence, India is a major developing country of the world. India is considered to be a global market too. Because of various economic reforms from time-to-time, India's economic development has paced up.

The proportion of youth in India's population is high. Because this forms a major part of a working population, India is looked upon as a young country.

Historical Background : Brazil

For more than three centuries, Brazil was under Portuguese rule. Brazil gained its independence in 1822. From 1930 to 1985, for more than a half century, it was under a populist military government.

It has overcome global financial difficulties in the late 20th century. Brazil is seen as a contributor to economic growth of the world and an important market in the future.

Show the following elements in Fig 2.3.

- Name all the continents and oceans of the world.
- Colour Brazil and India using different colours and name them
- Draw equator on the map and write its value in degrees.
- Show the symbol for direction.



Colours of Both

Answer the following questions with respect to the countries that you have studied.

- Out of the countries that you have coloured, which country is larger in size?
- Which country has a larger latitudinal extent?
- How do the locations of Brazil and India differ in terms of their positions in their respective continents?
- How many states does each of the two countries have?
- Draw the flags of these countries in your notebook.
- Obtain information regarding the emblems of both the countries.



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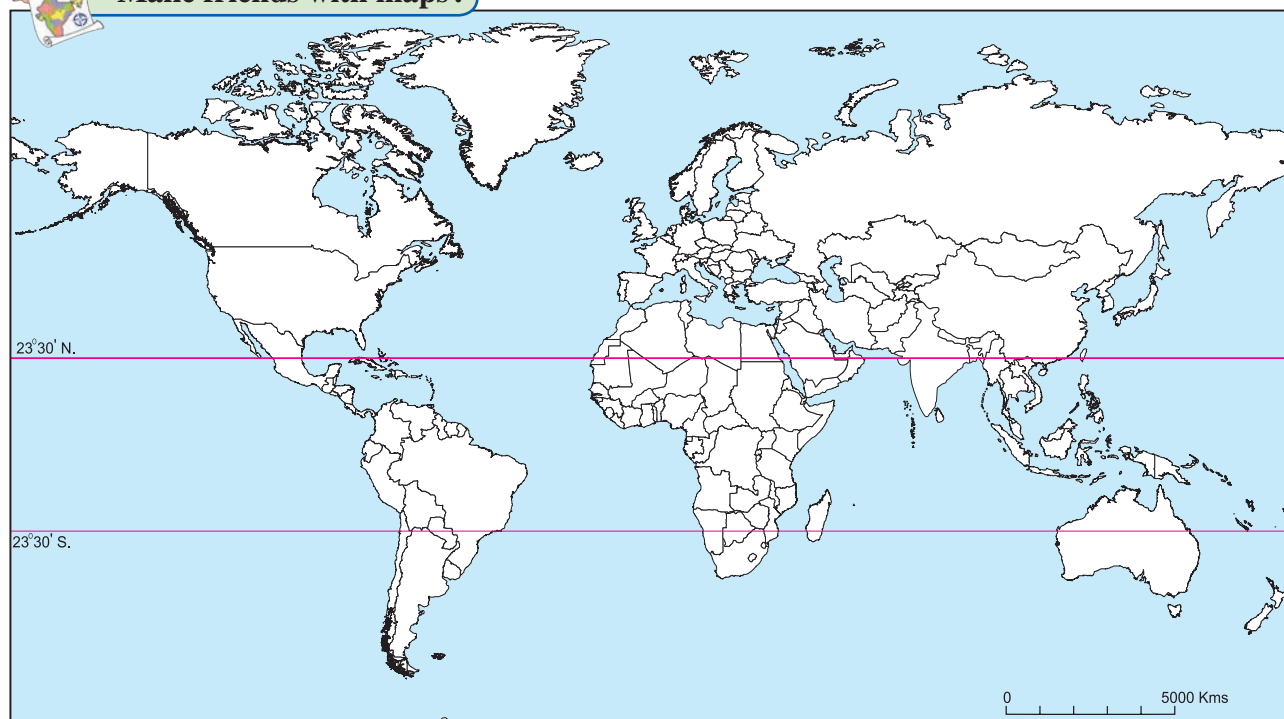


Figure 2.3 : World Outline Map



Give it a try.

- 👉 Find the difference between post-independence characteristics of India and Brazil.
- 👉 The imperial power which ruled Brazil also ruled a part of India. Find out when that part of India achieved independence ?



Do you know ?

- We celebrate our Independence Day on August 15, whereas Brazil celebrates her Independence day on Sept. 07.
- India has federal parliamentary republic type of government, whereas Brazil has federal presidential republic type of government.
- The name 'Brazil' comes from 'Pau Brasil', a local wooded tree.



Exercise

Q 1. Are the sentences right or wrong. ? Rewrite the wrong ones

- (a) Brazil is mainly located in the Southern Hemisphere.
- (b) Tropic of Capricorn passes through the middle of India.
- (c) The longitudinal extent of Brazil is less than India.
- (d) Equator passes through the northern part of Brazil.
- (e) Brazil has a coastline along the Pacific Ocean.
- (f) Pakistan is a neighboring country to the south east of India.
- (g) The southern part of India is called Peninsula.

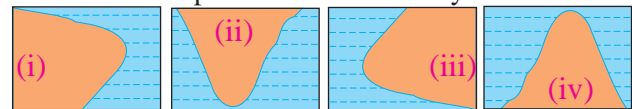
Q 2. Answer in brief:

- (a) What problems did Brazil and India face after independence?
- (b) How are Brazil and India different from each other in terms of location?
- (c) Describe the latitudinal and longitudinal extent of India and Brazil.

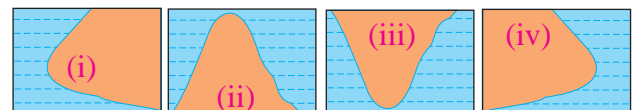
Q 3. Select the correct option

- (a) India's southernmost point is known as :
 (1) Lakshadweep (2) Kanyakumari
 (3) Indira Point (4) Port Blair
- (b) These two countries in South America do not share their border with Brazil.
 (1) Chile-Ecuador
 (2) Argentina- Bolivia
 (3) Columbia- French Guiana
 (4) Surinam -Uruguay
- (C) Both the countries have type of government
 (1) Military (2) Communist
 (3) Republic (4) Presidential

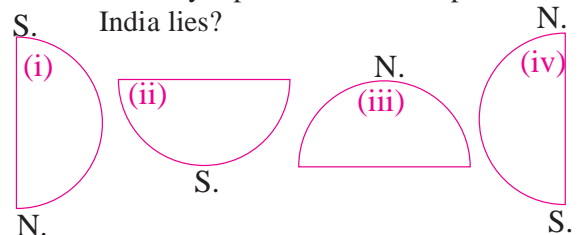
(d) Which of the following shapes show the coastal part of Brazil correctly?



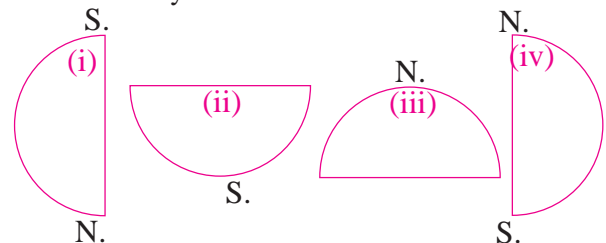
(e) Which of the following shapes show the coastal part of India correctly?



(f) Considering hemisphere, which shape correctly represents the hemisphere in which India lies?



(g) Considering the hemisphere, which correctly represents the hemisphere in which Brazil mainly lies?





3. PHYSIOGRAPHY AND DRAINAGE



Figure 3.1

Observe the map given in figure 3.1 and answer the following questions:

- In which direction does the region with an altitude of more than 6000m lie in India ?
- Look for the south-flowing river in the peninsular region. In which river basin does it lie?
- In which direction is the slope of the region in the north shown in dark green?
- Make a list of plateaus located in between Aravali ranges and Chhota Nagpur Plateau.
- Name the peak shown in the Eastern Ghats
- Which mountains demarcate the deep plains of Brahmaputra?

- Give the relative location of the Nilgiri Hills.
 - In which direction does the height of the Sahyadri hills increase?
 - The Vindhyas act as water divide between which two river basins?
- Observe figure 3.2 and answer the following questions :
- What is the range of the altitude of Amazon river basin?
 - Between which two highlands is the



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Amazon river basin located?

- Observe the region with the altitude 500 to 1000 metres. Describe the locational extent of this region shown in yellow with reference to direction.
- What do the isolated regions shown in yellow indicate?
- Besides the Amazon river basin, where else do you find regions with an altitude of less than 200m?
- Describe the plateau region with height of 200 to 500 m through which tributaries of Amazon how in your own words.



Figure 3.2

India :

Figure 3.1 shows the physiography of India. The country is divided into five major physiographic divisions

- The Himalayas • The North Indian Plains
- The Peninsula • Coastal Plains • Island groups.

Himalayas : The Himalayas is one of the young fold mountains in the world. The Himalayas extend from Pamir Knot in Tajikistan to the east. It is a major mountain system of the Asian continent. In India, it extends from Jammu and Kashmir to Arunachal Pradesh.

The Himalayas is not a single mountain range. There are many parallel ranges in the system. The southernmost is known as Siwaliks. It is also the youngest range. Next to Siwaliks are Lesser Himalayas, Greater Himalayas (Himadri) and Trans Himalayan ranges from south to north. These ranges are young to old respectively.

These mountain ranges are also divided into Western Himalayas (or Kashmir Himalayas), Central Himalayas (or Kumaun Himalayas) and Eastern Himalayas (or Assam Himalayas).

North Indian Plains : This division lies between Himalaya Mountains in the north and the Peninsula in the south. Similarly, it extends from Rajasthan and Punjab in the west to Assam in the east. It is mostly a flat low lying area. The North Indian Plains are divided into two parts. The part lying to the east of the Aravalis is the basin of the river Ganga and is therefore known as the Ganga Plains. It slopes eastward.

Most of the West Bengal State of India and Bangladesh together constitute the delta of Ganga-Brahmaputra system. It is known as Sunderbans. It is considered to be the world's largest delta. See Fig 3.3.



Figure 3.3 : The image of Sunderban Delta

The western part of the North Indian Plains is occupied by desert. It is also known as Thar Desert or Marusthali. Most of Rajasthan is occupied by this desert. To the north of the desert lie the plains of Punjab. This region is spread to the west of Aravalis and Delhi ranges. These plains have formed as a result of the depositional work by river Sutlej and its tributaries. The slope of the plains is towards the west. Because the soil here is very fertile, agriculture is largely practised in this region.

The Peninsula : The area lying to the south of North Indian Plains and tapering towards the Indian Ocean is called Indian Peninsula. It consists of many plateaus and hill ranges. The Aravalis in the north are the oldest fold mountains here. It includes a series of plateaus bordering the Plains, Vindhyas and Satpuda ranges in the central part and the hilly regions of Western and Eastern Ghats.

**Can you tell ?**

On the basis of Fig 3.1, answer the following questions:

- In which direction do the Aravalis lie ?
- Aravali ranges act as a water divide between which rivers?
- Name the hills located on the plateaus to the east of Aravalis.
- Across which states has the Deccan Plateau spread?

- Which hill ranges lie to to the west of the Deccan Plateau?
- Enumerate the characteristics of the Western Ghats.
- Compare the Eastern and the Western Ghats.
- Why are the Western Ghats called a water divide?

The Coastal Plains : India is blessed with a long coastline extending for approximately 7500 km. It lies to the western and eastern part of the Peninsula. Its western and eastern coastlines show remarkable dissimilarities.

The western coast borders the Arabian Sea. It is by and large a rocky coast. At places, spurs taking off from the Western Ghats have extended right up to the coast. Its width is also less. Rivers originating from Western Ghats are short and swift and hence they form estuaries and not deltas.

The eastern coast borders the Bay of Bengal. It has formed as a result of depositional work of rivers. Many east flowing rivers using from the Western and Eastern Ghats meet this coast. Because of the gentle slope of the land, rivers flow at lower velocities and deposit the sediments brought with them at the coast. As a result, deltas are found along this coast.

The Island group : India has many small and large islands along the coast of the mainland. These are included in the coastal island group.. Besides, India has two large group of islands, one each in the Arabian Sea and in Bay of Bengal. The islands in the Arabian Sea are known as Lakshadweep whereas the islands in the Bay of Bengal are called the Andaman and Nicobar Islands.

Most of the islands in Lakshadweep are atoll islands. They are small in extent and not very high.

Islands in the Andaman group are mainly volcanic islands. They are large with hills in their interior parts of includes an island called Barren Island which has the only active volcano

in India. There are atolls in the Nicobar group too.

Brazil :

Even a cursory look at the map will make you realize that a large part of Brazil is occupied by highlands, plateaus and small mountains. There are no very high and long extending mountains in the country. Except for the northern Amazon basin and in southwest along the upper parts of Paraguay basin, there are no wide plains in the country. Even the coastal plains are restricted in their expanse. The physiographic divisions of Brazil are as follows.

- The Highlands
- The Coastal region
- The Island groups :
- The Great Escarpment
- The Plains.

The Highlands : The southern Brazil is occupied by an extensive plateau. It is differently described as Brazilian Highlands or Brazilian Shield or Brazilian Plateau. Brazilian and Guyana Highlands together form the core of South American continent.

The main part of the Guyana highlands is in Venezuela and it extends upto French Guiana. In Brazil, it covers the states of Roraima, Para and Amapa in the north. The lower part of these highlands is found in Brazil. But the highest peak of Brazil, Pico de Neblina, is 3014 m high and lies on the border between Brazil and Venezuela.

The regions to the east and south of the Brazilian highlands have an altitude of more than 1000m. But in other parts, the altitude is between 500 to 1000m. The highlands gradually slope towards north and slopes are not very steep. The tributaries of Amazon flowing through this region make rapids and waterfalls. Towards the north the slopes are steep but not abrupt. A number of rivers take off from the terminal portion of the highlands and flow northwards to meet Atlantic Ocean.

Some major rivers like Uruguay, Paraguay and Parana originate from the southern slopes of the highlands and enter Argentina. Its slope towards the east is steep and it appears in the form of an escarpment.

The Great Escarpment : Though it occupies a very small area, the nature of its slope and the effect it has on the climate makes it a separate physiographic region. The eastern side of the Highlands is demarcated because of the escarpment. In this region, the altitude of the escarpment is 790m. In some regions, the height decreases gradually. The escarpment is very steep particularly from Sao Paulo to Porto Alegre. The escarpment act as a barrier to the Southeast Trade winds giving rise to the rain-shadow area in the northeastern part of the highlands. The region to the north of this area is called 'Drought Quadrilateral'.

The coasts : Brazil has a coastline of about 7400 km. One may divide that into two parts namely northern and eastern coast. The northern coast extends from Amapa province in the north to Rio de Grande de Norte in the east. This can be called as the North Atlantic coast. From there, the eastern coast extends towards the south.

The northern coast is characterized by mouths of many rivers including the Amazon. Therefore this region is a low-lying region. On this coast lie the Marajo island, Marajo and Sao Marcos Bays. Marajo is a large coastal island located between the mouths of River Amazon and River Tocantins.

The eastern coast receives large number of smaller rivers. The only major river which

meets the Atlantic Ocean here is Sao Francisco. The Brazilian coast is characterized by a large number of beaches and sand dune complexes. The Brazilian coast is protected in some areas by coral reefs and atoll islands.

The Plains : The plains in Brazil are confined to two areas namely the Amazon basin in the north and Paraguay-Parana source region in the southwest. Amazon plains lying between the two highlands form the largest plain land of Brazil. Amazon plains lying in the northern parts of Brazil generally slope eastwards. The Amazon basin is quite wide in the west (about 1300 km) and it narrows eastward. Its width is minimum where the Guiana Highlands and Brazilian Highland come closer. (240 km.) As the river approaches the Atlantic Ocean, the width of the plains increases. These are mostly forested areas and largely inaccessible due to frequent flooding and dense undergrowth. Most of the Amazon plains are covered by tropical rainforests.

The other plains in Brazil are located to the southwestern part of the highlands. They form the source region of Paraguay and Parana rivers. The source region of Paraguay slopes towards the south while the source region of Parana slopes towards the southwest.

Pantanal is one of the largest wetlands in the world. It lies towards the southwest part of the highland areas . It is a region of swamps and marshes in northwestern Mato Grosso do Sul in Brazil and it extends into Argentina too.

Islands : Besides the mainland, some islands are also included in Brazil. They can be classified into coastal islands and marine islands. Most of the coastal islands have formed due to deposition. Marine islands were a part of the mainland. They are more than 300 km away from the mainland in the Atlantic Ocean. These islands are mostly rocky and they are the top of the submerged mountains. The islands near the coast of the South Atlantic Ocean are coral islands and they are called atolls.



Do you know ?

Praia do Cassino or Casino Beach is the southernmost beach of the Brazilian coast on the South Atlantic Ocean. It is considered to be the longest sandy beach in the world. It is a continuous beach extending for more than 200 km



Colours of Both

Figures 3.1 and 3.2 show the physiography of India and Brazil. Use the maps and the indices to answer the following.

- Compare the indices of both the maps.
- In which parts do the areas with highest altitude lie in both the countries, respectively?
- In which country is the range of altitude higher?
- Compare the highest range of altitudes given in both the countries. What difference do you see?
- In which direction is the slope of the Amazon river basin region?
- In which direction is the slope of the Deccan Plateau of India ?
- Tell the regions of rain shadow in both the countries.
- Considering the distribution of altitude, direction of slope of land and other characteristics of physiography, write 10 sentences each about the physiography of India and Brazil.

DRAINAGE :



Try this.

Maps showing major rivers of Brazil and India are shown in figure 3.3 and 3.4 . Take two tracing papers and prepare drainage basin maps of Amazon and Ganga. Name the basins.

Write a comparative note on the basins of Ganga and Amazon river. You may consider following points for the comparison.

- Size of catchment area (consider the map)
- Their relative location within respective countries
- Headwater regions of rivers.
- Orientation of the rivers
- Major tributaries and their orientation.

- Any other point(s).

Some more information :

	Ganga River	Amazon River
Total catchment area (in sq.km)	10,16,124	70, 50, 000
Total length of river (in kms)	2,525	6,400
Water discharge (Cu.m. per sec)	16 , 648	2,09,000

Geographical explanation

Brazil :

Drainage of Brazil : As far as the drainage in Brazil is concerned, there are three major river Basins.

- Amazon Basin
- Paraguay-Parana system in the southwest
- Sao Francisco in the eastern part of highland and other rivers at the coasts

Amazon basin : Amazon collects its headwaters from the eastern slopes of Andes Mountains in Peru.. Amazon River receives huge discharge. This is about 2 lakh m³/s . As a result, Amazon washes off the load supplied to it from the catchment. Consequently, sediments are not deposited even at the mouth. A dense network of distributaries, which is a characteristic feature of river mouth areas, is by and large absent in the mouth region of Amazon. Instead we find a series of islands developed along the mouth of Amazon beyond the coast line in to the Atlantic Ocean. It will be interesting to note that at the mouth the width of Amazon channel is 150 km. (Take into consideration a place which is 150kms away from your home. You will get an idea of the width). Most of the course of the Amazon river is suitable for navigation.



Make friends with maps!



Figure 3.4 : Brazil - Drianage

Paraguay-Parana system : These two rivers are located in the southwestern part of Brazil. Both the rivers form the catchment of River Plata in Argentina. These two rivers and river Uruguay in extreme south of the highlands collect their headwaters from the southern portion of the highlands.

Sao Francisco : It is the third important river of Brazil. The entire basin of this river is within Brazil. It occupies the eastern portion of the highlands. The river flows towards the

north for a distance of about 1000 km over the plateau and then takes a sharp eastward turn to enter the coastal strip along the Atlantic Ocean. The river is navigable for a distance of about 250 km in its downstream reaches.

Coastal Rivers : Brazil has a number of short coastal rivers. The coastal area being densely populated these rivers attain significance. River Paranaiba and River Itapecuru flowing northwards meet the North Atlantic Ocean. The rivers that enter South