

The movement of people and goods from one place to another is called transportation. In general terms, the process of going from one place to another is known as transportation. The transportation has an important contribution in economic and physical progress. Due to transportation, the exchange of goods and people is made possible. Distant places can be linked through transportation. National integration and processes like industrialization and urbanization are made possible due to transportation.

Earlier there was less interaction among people in comparison with today. Now people make use of communication equipment more and more for exchanging messages. Mails-telephones, cell (mobile) phones and internet services are being used very widely. India has launched satellites for space research. This has improved the telecommunication services very much.

Trade is the tertiary economic activity. Trade encourages production activity. No country can ever be self reliant totally. So it has to make exchanges with other countries, e.g. The agro-products of India are sent to middle-eastern countries and we import date-palms and mineral oil from them.

Transportation

Earlier man used to live a wanderer's life, but after the invention of agriculture, he started living a sedentary life. Earlier he used to carry his things himself. In due course, he started using animals as beast of burden in agriculture and animal husbandry. In modern period, auto vehicles are used more than animals in transportation.

The types of transportation are affected by factors like location, climate, relief, human population etc. Moreover, some cultural factors like technical development, economic development, market and capital investments, political decisions etc. also affect the transportation. Transportation is carried out by roads and railways in plain region. In mountainous



14.1 Man transporting goods in mountainous region



14.2 Goods transported by elephants in forest area

regions, animals and man are used (Yak in the interim places in Himalayas) for transportation of goods. During ascent to Everest, Bhotia people, who are better mountaineers also, work as labourers to carry goods. Besides, elephants, mules and horses are used in the mountainous forests. Camel is best for transportation in desert. You might have seen a woodcutter carrying wood on his head. On railway stations, the coolies are also seen carrying luggage on their head. Ship or a small boat is used as transport vehicle near the sea coast or where the river is fairly deep and is perennial.

Roads or Land Transportation

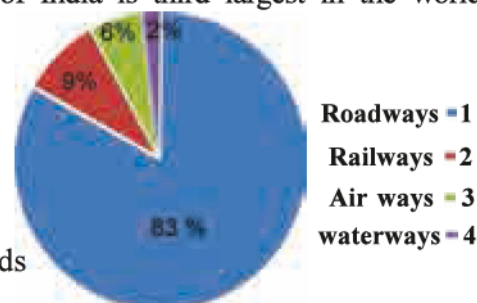
Roads were important in transportation since ancient times. There was a road network of highways during the rules of Samrat Ashok and Chandragupta Maurya. Roads are complimentary to the railways, sea routes and air routes. Most important characteristics of roads are the widespread field of their services, safety of goods, saving of time and cheap and multi-services. The only option to connect goods, man and the area is roads. The road system of India is third largest in the world after united states of America and China.

Things to know

Roadways form about 83%, railways 9%, airways 6% and waterways form about 2% of the total national transportation system.

Classification of Indian Roadways

- (1) National Highway (2) State Highway (3) District Roads
- (4) Village (Approach) Roads (5) Border Roads



14.3 Ratio of Transportation

(1) National Highway : Highways are important not only from economic development point of view but also from the safety point. The responsibility of the construction of these highways rests with The Central Government. The State capitals, large industrial and commercial cities and major ports are interconnected by these highways. These roads also connect India with neighbouring countries like Myanmar, Pakistan, Nepal, Bhutan and China. National Highway No. 44 is the longest highway of the country and it connects Srinagar with Kanyakumari. Four metro cities Delhi, Mumbai, Chennai and Kolkata will be interlinked by Golden Quadrilateral Highway System.

National Highway No. 27, 41, 47, 141, 147 etc. pass through Gujarat. These numbers are changed by the Government of India in 2011.

Considering from total population of view Chandigarh, Puducherry, Delhi, Goa states have more number of national highways. Next come the states of Mizoram, Arunachal Pradesh, Meghalaya, Manipur etc. The total length of national highways is less in those states like Uttar Pradesh, West Bengal, Bihar, Madhya Pradesh, Rajasthan, Maharashtra and Gujarat where there is more population.

(2) State Highway : State highways are important for trade and industries. These roads are connected to all districts and the national highways. The responsibility of construction and maintenance of these roads lies with the State Governments.



14.4 National Highway with Milestone



14.5 State Highway with Milestone



14.6 Village Road with Milestone



14.7 Approach Road

(3) District Roads : These Roads connect villages and the main cities with the district headquarters, and the headquarters of talukas and districts. Earlier, these were all unmetalled roads, but now most of them are converted into metalled roads. These are maintained by district panchayats.

(4) Village Roads : The construction and the maintenance of these roads is done by Gram Panchayat. These roads which connect the roads passing by the villages are unmetalled and so these are not useful in rainy season. Under Pradhan Mantri Gram Sadak Yojana, attempts are made to improve the village transportation. Under the scheme, a large scale work is undertaken to convert these roads into metalled roads.

(5) Border Road : Border Road organization was established in 1960. This organization constructs roads in the border area for the defence of the country and for protection. It undertakes work like construction of roads in inaccessible remote area and its maintenance, to clear snow etc.

Expressways

| | | | | |
|-----------|----|--------|-----|------|
| અહમદાબાદ | 92 | જયપુર | 750 | ME-1 |
| અમદાવાદ | ↑ | જયપુર | ↑ | |
| AHMEDABAD | | JAIPUR | | |

14.8 Sign Board on Expressways

Expressways are also called Drut Gati Marg. Vehicles can be driven without any obstruction on these highways of four or six lanes. Overbridges are constructed along these highways wherever there is a railway crossing or a cross road. Ahmedabad-Vadodara Express Highway in Gujarat is an example of this. A toll tax has to be paid for using this highway. Roads have been constructed connecting all major ports of the nation.



14.9 National Highways of India

Traffic Problem

Overbridges, bypass roads and ring roads around the cities are constructed to avoid the traffic problem in larger cities. However, the traffic problems go astray in metropolitan cities due to the increase in vehicles. The urban roads cannot be widened compared to the increasing population and increasing number of vehicles. With increasing encroachments along the roads, traffic jam scenes have become very common during peak hours in cities. Traffic jam is also caused due to marriage processions, social processions and other processions. In cities like Delhi, the traffic jam does not get cleared for many hours. So those going for important work, examinee, passengers heading towards the railway station, airport and patients needing immediate treatment unable to reach hospitals are put to inconvenience.

Some suggestions to remove traffic problems

In Std. 9, you have studied some suggestions about traffic problem. Now let us study in details.

- If you are a student and if you do not have a driving licence, you should not drive a vehicle. You can contribute this way in solving traffic problems.
- Do not overtake unless it is necessary.
- Two wheelers like cycle, scooter etc. should be driven only on the left side of the road.
- Do not use Mobile Phone while driving. If it is inevitable, show the sides, stop the vehicle on the left side of the road and then only talk in the cell phone.
- Allow the vehicles like 108, ambulance and fire brigade to pass first.
- Do not create noise by blowing unnecessary horn.
- Follow the rules of traffic.
- Walk down to nearby places or use a cycle.
- At night, use dipper only if it is absolutely necessary.
- Keep safe distance between two vehicles while driving.
- A regular maintenance and repairing work of the vehicle should be carried out periodically.
- Fire extinguisher and a First Aid Box must be kept invariably in the vehicle. Before driving check whether there is enough fuel, proper air pressure in the tyres and whether there is any mechanical defect in the vehicle. Also maintain a spare wheel in the vehicle.
- All passengers sitting in the vehicle must use seat belt invariably. Put up a red stripe and a reflector on the rear of the vehicle without fail.
- The vehicle should be stopped while waiting at the railway crossing or at the other signals to save the fuel.
- The driver must know the Traffic Rules beforehand.
- It is necessary for the driver to take enough sleep.
- Do not drive the vehicle on the opposite (or wrong) side of a 'One Way' road.
- The driver should use both the side mirrors as well as the mirror in the centre.
- The vehicle should be parked at a fixed place and in such a way that it must not become hindrance.
- The brake lights of all vehicles must be working. While taking a left or a right turn, the respective indicator must be used.
- If there is a line drawn on the State Highway or a Express Highway, the speeding vehicles should be drive in the specific lane. The heavy vehicles should be driven on the left side of the road only.
- Do not accommodate passengers in the heavy vehicles transporting goods.
- Always keep watch on speed limit of vehicle while driving.
- At the time of an accident, keep your vehicle in the specific lane and cooperate in maintaining the traffic arrangements. If you come across an accident on the road, immediately inform on No. 108 and be helpful in taking the injured people to the suitable place get proper treatment.
- The two wheeler rider must wear helmet while driving.
- Reduce the speed of the vehicle while approaching to a turn.
- Do not blow horn while passing through the 'No Horn' zone such as a school or a hospital and maintain the speed limit. Reduce the speed of the vehicle while approaching to a bump.

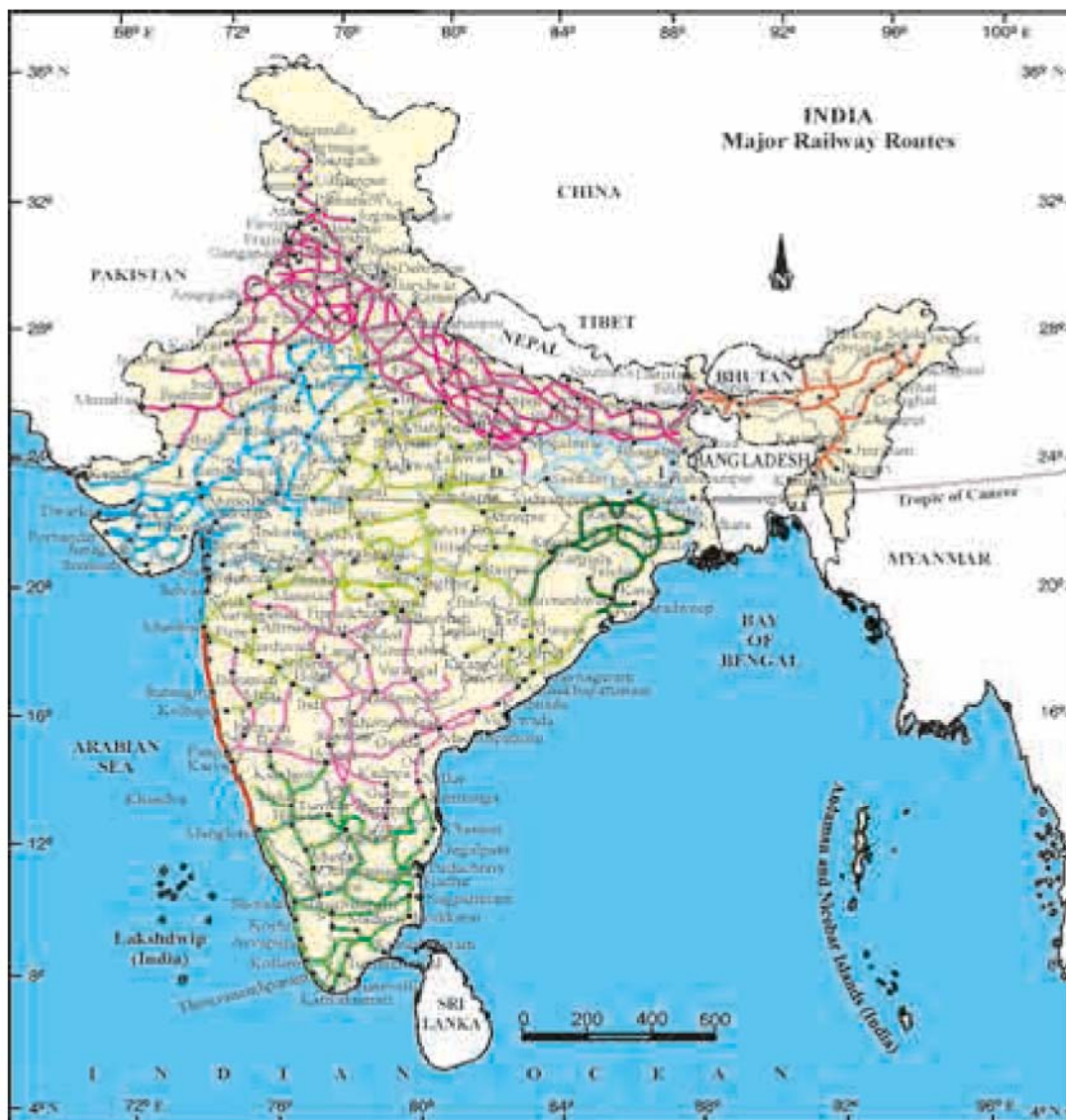
Railway

Indian railways is the largest national institution. Indian Railways is the main medium of transportation to co-operate in the economic fields of India such as agriculture, industries, trade, service etc. It has a major contribution in national security, peace, management, to establish cultural and geographical unity and to maintain it. India ranks first in Asia and second in world in railways.

Progress of railways : First railway in India started in 1853 between Mumbai and Thane. There are three types of railway in India. These are : Broad Gauge, Metre gauge and Narrow gauge. The metre gauge and narrow gauge railway tracks are being converted into broad gauge in recent times. This is a big achievement for Indian railways. Due to different gauges, lot of time was wasted in traveling, and transporting passenger goods. So much money was wasted.

Railway network is more dense in the States which have plain region, dense population, industrial development, intensive agriculture and have rich mineral fields. Large cities like Kolkata, Delhi, Jaipur have Metro Rails also. Work has started on the metro rail project between Ahmedabad and Gandhinagar. Mono rail has been found very important to connect Mumbai with its suburbs.

Railway is useful for the transfer of passengers and material goods. Besides it is also useful for the speedy transfer of food grains and forage during drought. From defence point of view also it is useful for transferring soldiers and weapons. Konkan Railways has provided a good example by laying down railway tracks through Tunnels in the mountainous regions which were highly inaccessible. Indian Railways is considered to be excellent for time, safety and facilities and it is being modernised very fast. The route between Dibrugarh and Kanyakumari is the longest railway route in India.



14.10 Major Railway Routes of India

which is known as vivek express. In Gujarat, Ahmedabad is the biggest railway station. Other important railway junctions are Mahesana, Viramgam, Rajkot, Vadodara, Surat, Anand etc.

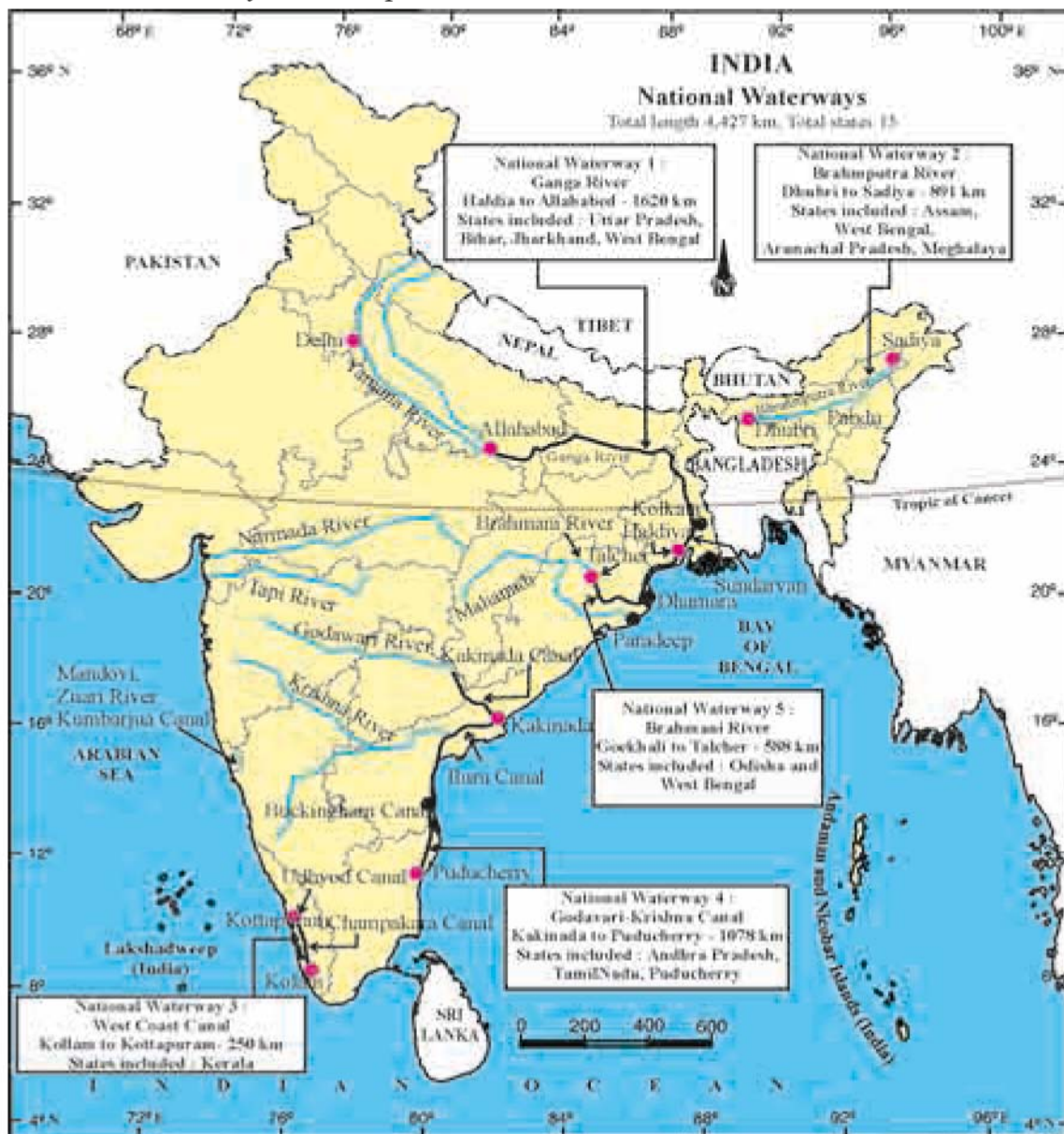
Waterway

Water transportation was carried out in India since ancient times. All transactions were done through waterways when roads and railways did not exist. Compared to roads and railways the waterways are cheaper, because no expense is incurred in their construction or maintenance. There are two types of waterways in India : (1) Internal waterways (2) Oceanic Waterways.

Internal water transportation services are developed more in Assam, West Bengal and Bihar states of North-East India, while in South India also, internal waterways are used more for services.

Transportation by river-canal : West Bengal, Assam, Tamilnadu and Bihar are important states as river waterways. Steamers and large boats use these permanent waterways. To maintain the internal water transportation, the Government has recognised the following waterways as National waterways.

- National waterway 1 Ganga River : Haldia-Allahabad 1620 Km
- National Waterway 2 Brahmaputra River : Dhubri-Sadia 891 Km



14.11 Major Waterways of India

- National Waterway 3 West Coast Canal : Kollam-Kottapuram 250 Km
- National Waterway 4 Godavari Krishna River : Kakinada - Puducherry 1078 Km
- National Waterway 5 Brahmani River : Goenkhali -Talcher 588 KM

Oceanic waterways : India has about 7516 km long coastline. Along this coastline, there are 13 major and about 200 minor ports. After shipping corporation of India was founded, there has been much development of national and international waterways. Kandla, Mumbai, Navasheva, Margao, New Mangalore and Kochi ports are located on the western coast, While Kolkata, Haldia, Paradwip, Vishakhapattanam, Chennai, Tuticorin etc. are main ports of eastern coast.

Gujarat has got a long coastline of about 1600 km. Kandla is the largest port of Gujarat. Bhavnagar is the only port having automatic lock-gate system. Porbander is a free port for the entire year. Other important ports are Veraval, Sikka, Pipavav, Navlakhi, Mundra, Poshitra, Okha and Hajira. A project is undertaken to develop Poshitra port.

Airways

It is the speediest and costliest mode among all types of transportation. Airways are used to reach distant places, remote and dense forests and to reach those places which are not accessible easily by road. In india, the weather remains favourable for aviation almost throughout the year. In present day, airways are used more and more.

The airways services in India were as air mail services between Allahabad and Naini. It was run by a private company. Today “Air-India” and other private companies provide air transportation services.

Today Airport Authority of India carries out the management of 127 airports which include 15 international, 87 domestic, 25 civilian airport terminals. There are international airports such as Kolkata, Mumbai, Chennai, New Delhi, Bengalru, Hyderabad, Ahmedabad etc. Pavanhanse Helicopters provides helicopter services to O.N.G.C. and to Government.

Other means of Transportation

Pipelines are used to transport liquid material such as water, mineral oil, natural gas and other liquids. An oil pipeline exists between Naharkatia of Assam to Nunmati-Barauni. One pipeline goes from Kalol To Koyali in Gujarat and from Salaya to Mathura. A pipeline has been installed from Bombay High upto Mumbai coast. In Gujarat, Natural Gas is transported through pipeline to Khambhat-Dhuvaran-Koyali-Ahmedabad. Cooking gas is provided through pipelines to Surat, Bharuch, Vadodara, Ahmedabad, Jamnagar, Morbi, Rajkot, Gandhinagar cities.

Ropeway : In mountainous regions, the summits are connected by ropeway to transport goods and passengers. There are about 100 ropeways in India. Ropeways are seen in Darjeeling, Kullu-Manali, Cherrapunji, Haridwar etc. in North India and in the mountainous regions of Chennai and Malai. The ropeway services in Gujarat are available at Pavagadh, Saputara and Ambaji. Work for a ropeway has started at Girnar in Junagadh.

Communication

The arrangement to send or to collect information from one place to another is called “Communication”. The communication system has proved extremely useful in routine life for relief and rescue works at the time of natural hazards like flood, drought, cyclone, tsunami. The communication system plays an important role in the economic, social and cultural progress and for maintaining national integration and unity.

In ancient times, messages were sent by playing the dhol (drum), by smoke, by pigeons and through other animals. In modern communication, mail services, telephone, mobile telephone, smart phone and satellites have made the communication very speedy and easy. Science and

technology have contributed very much in developing the field of communication. Today we can see all important events live. Communication can be divided into two parts : (1) Individual communication system (2) Mass communication system.

(1) Individual Communication system : Internet and smart phones are the effective among individual communication system. E-mail, E-commerce, exchange of currency etc. have become very fast due to internet. Moreover, there has been a revolution in telecommunication through various applications on social media. Villagers also remain in live contact with people locally and in abroad.

(2) Mass Communication System : There are two mediums in mass communication system : (1) Print media which includes newspapers, magazines, pamphlets. (2) Electronic Media which includes Akashwani and Doordarshan. Prasarbharti is the autonomous body for transmissions in the country. Its two divisions are Akashwani and Doordarshan. There are 415 radio stations in the country today. It broadcasts programmes in 23 languages. It can be used conveniently in the most remote area also. It becomes an important unit for contacts at the time of natural disasters. With use of satellites, Doordarshan news, weather reports and programmes on entertainment and education are also telecast. Today, many private channels also have started programmes like Doordarshan.

Satellite Communications

Artificial Satellites have their own communication skills. But along with that, it also controls other mediums of communication. The Indian National Satellite (INSAT) satellites launched by India are multi-purpose systems, which is helpful to Doordarshan for the forecast of weather, cyclone and thunderstorms, warning for disasters, research and other telecasts. Besides, there has been a development of indigenous Polar Satellite Launch Vehicle (P.S.L.V.) through the Indian Remote Sensing Satellites (I.R.S.).

Trade

India is a vast country. At some places, there are mountainous regions, coastal plains and deserts. Same type of diversity is seen in climate, vegetation, mineral resources and energy resources. There are different crops in every region and also the difference in industrial output. As a result, there are two types of trade systems in the country : (1) Internal Trade and (2) International Trade.

(1) Internal Trade : The commodities available in excessive quantity of one state is transported to another state and vice versa. This is known as Internal Trade. For example, Punjab produces more wheat, so it exports it to other States. But Punjab does not have a sea coast, so it gets its salt from Gujarat. Thus every state exports its products. The internal trade has developed in India due to this.

(2) International Trade : The system in which different countries of the world export and import their requirements can be called International Trade. It is necessary to maintain trade balance in international trade, otherwise there would be a negative trade balance. If a country exports more than it imports, its trade balance is positive. This increases the reserves of foreign exchange of our country. If the imports exceed the exports, then the trade balance is negative. The currency value of that country which increases its export increases in international market and the currency value decreases in the international markets of those countries which increase their imports. After the Liberalisation policy of 1991, there have been many changes in the international trade of India. In last few years, the trade balance of India is mostly negative. In order to make this trade balance positive, the government has started “Make in India”. Due to this, many foreign companies will produce their goods in India and will export them to foreign countries. Now we shall study the export-import trade of India.

Import Trade of India

When the iron production in India is not sufficient, India imports iron and copper. The demand for petroleum mineral oil and lubricants is more for transportation and for keeping the machines

active, these are imported. We also import machines, pearls, gemstones and edible oils as per our requirements. We import these things from U.S.A., Germany, Russia, Myanmar, Iran etc.

Export Trade of India

Only a limited portion of the production is allowed to be exported, so that its price may not increase within the country. We import raw materials for few things, manufacture some goods from them and then export them. Indian export includes iron ore and minerals, engineering goods such as cycle, fans, sewing machines, cars, railway coaches, computer software etc.

We also export chemicals and the things related to them, gem stones, hide and leather goods, cotton textile, fish and its products, handicrafts, tea-coffee, jute and its products and readymade clothes.

Exercise

1. Answer the following questions in details :

- (1) Write short note on National Highway.
- (2) Mention the steps to control traffic problems.
- (3) Which are the main National Waterways of India?

2. Write to-the-point answers for the following questions :

- (1) What is included in mass communication ?
- (2) Which are the main commodities exported from India ?

3. Write answers to the following questions in brief :

- (1) Where are the ropeways located in Gujarat?
- (2) Which are the effective gadgets in individual communication?
- (3) What is Internal Trade
- (4) How was the communication carried out in earlier times?

4. Select the correct option from the options given for every question and write answer :

- (1) Who work as the porters during the ascent of Everest ?
(A) Nepali (B) Bhotia (C) Bhaiyajee (D) None
- (2) Which is the longest National Highway in India ?
(A) No.3 (B) No.8 (C) No.44 (D) No.15
- (3) Who is responsible for the construction of National Highways ?
(A) State Government (B) Central Government
(C) District Panchayat (D) None

Activity

- Gather online information about the railway facilities through the Mobile Application of Railways.
- Know about the route through various mile stones observed during travel.
- Know from your teacher about the export-import news publishing in newspapers.
- Visit a traffic park, watch the live demonstration of traffic rules and gather Information.
- Participate in the mock drill arranged to create awareness about traffic.