

Unit - 5

India - Population, Transport, Communication & Trade



Learning Objectives

- To study the levels of urbanization and its impacts in India.
- To know about the Human Development in India.
- To learn the transport systems of India.
- To understand the communication system of India.
- To assess the nature of trade in India.



Introduction

The study on human population is one of the most important aspects in geography of any region. The human population has many components but the most fundamental are its number, composition, distribution and density. Therefore, it is essential to study these components. The study on these aspects also would reveal the workforce of the country.

The population of India as per 2011 census is 1,210.19 million (1,21,01,93,422). It shows an increase of 19.31 crores from the population of 2001. Population Census of India provides the detailed information about the demography of India. Along with population, we will study about the transport and communication of India in this chapter.

5.1 Population

The total number of people residing in a country at a specified period of time is called the '**Population**' of that country. India is the

second most populous country in the world next only to China. India covers only 2.4 percent of the land area of the world, but is the home of about 17.5 percent of the world's population. It shows that the proportion of population of India is far higher than the proportion of its area. Thus, a little more than one out of every six persons in the world is from India. Our population is almost equal to the combined population of the USA, Indonesia, Brazil, Pakistan, Bangladesh and Japan and total population of these six countries is 1214.3 million.

5.1.1 Census

Population census is the total process of collecting, compiling, analysing or otherwise disseminating demographic, economic and social data pertaining, at a specific time, of all persons in a country or a well-defined part of a country. It happens in an interval of ten years. The data collected through the census are used for administration, planning, policy making as well as management and evaluation of various programmes by the government.

5.1.2 Distribution and Density of Population

The term '**Population Distribution**' refers to the way the people are spaced over the earth's surface. The distribution of population in India is quite uneven because of the vast variation in the availability of resources. Population is mostly concentrated in the regions of industrial centres and the good agricultural lands. On the other hand, the areas such as high mountains, arid lands, thickly forested areas and some remote corners are very thinly populated and some areas are even uninhabited. Terrain, climate, soil, water bodies, mineral resources, industries, transport and urbanization are the major factors which affect the distribution of population in our country.



In India the first census was carried out in the year 1872. But the first complete and synchronous census was conducted in 1881. And the 2011 census represents the fifteenth census of India.

Uttar Pradesh is the most populous state in the country with a population of 199.5 million followed by Maharashtra (112.3 million), Bihar (103.8 million) West Bengal (91.3 million) and the combined Andhra Pradesh (84.6 million). These five states account for about half of the country's population. More than one fourth of the population live only in the two states of U.P and Maharashtra. Sikkim is the least populous state of India (0.61 million). Delhi with 16.75 million population tops among the Union territories.

The uneven distribution of population in the country is the result of several factors such as physical, socio-economic and historical ones. The physical factors include relief, climate, water, natural vegetation, minerals

and energy resources. Socio-economic factors consists of the religion, culture, political issues, economy, human settlements, transport network, industrialization, urbanization, employment opportunity etc.

Hots

What could be the reasons for uneven distribution of population in India?

5.1.3 Density of population

Population density is a better measure of understanding the variation in distribution of population. It is expressed as number of persons per unit area usually per sq km. According to 2011, the average density of population of India is 382 persons per sq.km. India is one of the most thickly populated ten countries of the world. The most densely populated state of India is Bihar and the state with least population density is Arunachal Pradesh. Among the union territories, Delhi is the densely populated one with 11,297 per sq.km, while Andaman and Nicobar Islands have the lowest density of population.

Hots

What are the reasons for the rapid growth of population in India?





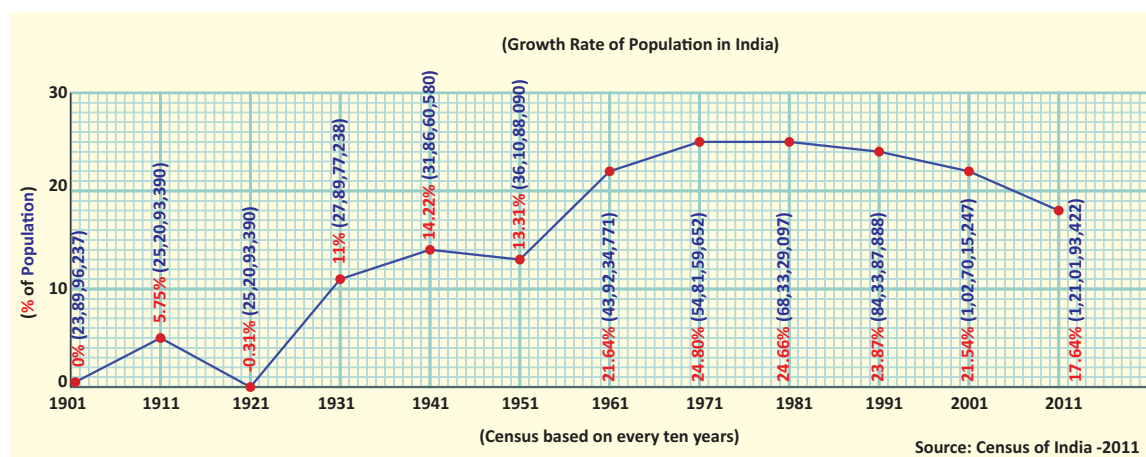
Spatial pattern of population Density	
Density	Places
Very Low Density (less than 150 persons per sq.km)	Arunachal Pradesh (17), Andaman and Nicobar Islands (46), Mizoram (52), Sikkim (86) Nagaland (120), Manipur (122), Himachal Pradesh (123), Jammu and Kashmir (124) and Meghalaya (132)
Low Density (150 to 300 persons per sq.km)	Arunachal Pradesh (17), Andaman and Nicobar Islands (46), Mizoram (52), Sikkim (86) Nagaland (120), Manipur (122), Himachal Pradesh (123), Jammu and Kashmir (124) and Meghalaya (132)
Moderate Density (300 to 500 persons per sq.km.)	Gujarat (308), The combined Andhra Pradesh (308), Karnataka (319), Tripura (350), Maharashtra (365), Goa (394), Assam (397) and Jharkhand (414) are the states with moderate population density. Assam has tea estates, Andhra Pradesh, Karnataka and Jharkhand
High Density (500 to 1000 persons per sq km.)	Punjab (550), Tamil Nadu (555), Haryana (573), Uttar Pradesh (828) and Kerala (859) The union territory of Dadra and Nagar Haveli(698)
Very High Density (greater than 1000 persons per sq km)	West Bengal (1029), Bihar (1102), Lakshadweep (2013), Daman and Diu (2169), Puducherry (2598), Chandigarh (9252) and Delhi (11,297).

5.1.4 Population Growth and Change

The growth rate of population is an important demographic feature. It not only helps in understanding the population change that a society has undergone in the past but also helps in predicting the future demographic characteristics of an area. Population growth refers to the change in the number of inhabitants of a country/territory during a specified period of time. The growth

of population is expressed in percentage and is described as the growth rate of population. The following table shows the decadal growth rate of population from 1901 to 2011.

Growth of population in India has gone through the different phases. Population of the country in 1901 was 238 million and it grew to 1,210 million over a period of little more than a century. The following are the different stages of population growth of India.





The Period of Stagnant Population (1901-1921): During the first phase of 20 years (1901-1921), the population of India grew by 15 million. The year 1921 registered a negative growth rate of -0.31% which happened only once throughout the demographic history of India and is called the year of Great Demographic Divide.

The Period of Steady Growth (1921-1951): During the second phase of 30 years (1921-1951), the population of India grew by 110 million.

The Period of Steady Growth (1951-1981): During the third phase (1951-1981), the population of India grew from 361 million in 1951 to 683 million in 1981. Growth rate in this period is almost doubled when compared to the previous phase of growth rate. This period is often referred to as the period of population explosion.

The period of High Growth with Definite Signs of Slowing Down (1981-2011): Population of India increased from 685 million to 1210 million during this phase. The growth rate of population decreased from one census to other. This marks the beginning of a new era in the demographic history of India.

Population change refers to an increase or decrease of population of an area from one period to another period. Population growth is influenced by the birth rate, death rate and migration. These three make the changes in population.

Birth rate refers to the number of live births per thousand people in a year and the Death rate refers to the number of deaths per thousand people in a year. The rapid decline in death rate is the major cause of the rapid growth of population in India.

5.2 Migration

It is the movement of people across regions and territories. It can be internal (within a country) or international (between

the countries). Internal migration does not change the size of population of a country but it influences the distribution of population in a nation. It plays an important role in changing the composition and distribution of population. In India, the mass migration is from rural to urban. Unemployment and under employment in the rural areas are the push factors and the employment opportunity and higher wages in the urban areas caused by the industrial development are the pull factors of migration in the country. 45 out of 121 crores of people in India are reported to be migrants as per 2011 census. Migrants constitute about 37% of population. Migrants are 48% from female and 52% from male.



Activity

Collect the pictures and make an album of various types of migration.

5.2.1 Population composition

Population composition refers to the characteristics such as age, sex, marital status, caste, religion, language, education, occupation etc. The study of composition of population helps us to understand the social, economic and demographic structure of population.

5.2.2 Age composition

The age composition of population refers to the number of people in different age groups in a country. It is one of the most basic characteristics of a population. It helps us



to understand the proportion of population in dependent and independent category. Population of a nation is generally grouped in to three broad categories. In India, the children who has less than 15 years of age constitute 29.5% and the people above 60 years constitute 8.0%. So, the dependent population in India is 37.5% and the independent population (16-59 yrs) is 62.5%. It shows that our country has enormous manpower.

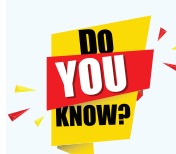
5.2.3 Sex Ratio

Sex ratio is defined as the number of females per 1000 male population. This is an important social indicator to measure the extent of equality between males and females in a society at a given time.

Hots

The sex ratio in our country is always unfavourable to females. Give reasons.

According to 2011 census, the sex ratio of the country is 940 females per 1000 males. This suggests that the size of female population is lower than males. Only in the state of Kerala and the union territory of Puducherry the sex ratio is greater than 1000. It is 1084 in Kerala and 1038 in Puducherry. The lowest sex ratio is recorded in the union territory of Daman and Diu (618).



The ratio between the economically active and economically inactive of population is termed as Dependency Ratio.

5.2.4 Literacy Rate

The people who are able to read and write are known as **literate**. It is an important indicator of quality of people. The percentage of literate people to the total population is termed as **literacy rate**. There has been a steady improvement in the literacy levels in India. India's literacy rate as per 2011 census

is 74.04%. From this, the literacy rate of male is 82.14% and the female is 65.46%. It shows that still there is a vast gap (16.68%) between the male and female literacy rates. Kerala ranks first in the country with a literacy rate of 93.91% followed by union territory Lakshadweep with 92.28%. The lowest literacy rate is found in Bihar (63.82 %).

5.2.5 Occupational structure

The economically active part of a country's population is enumerated during the census operations and stated as workers. Workers are placed under three fold categories in census record. They are main workers, marginal workers and non-workers. According to the Census of India, all those who had worked for the major part of the preceding year (at least 6 months or 183 days) are recorded as main workers. Those who worked for less than six months are recorded as marginal workers and the people who have not worked at all comes under non workers. Work participation rate denotes the percentage of total workers i.e., total main and marginal workers to the total population in an area. The work participation rate in India is 39.79% in 2011, out of which the work participation rate of male is 53.25% and the female is 25.51%. From the workers, main workers constitute 75.23% and the remaining 24.77% of the people belong to marginal workers.

5.2.6 Population Dynamics

Human population dynamics is a field that tracks factors related to changes in the size of population and its characteristics. Predicting population changes is an important aspect of population studies. The demographic trend affects the economic, social, and environmental systems. An increase in human population can affect the quality of natural resources like biodiversity, air, land, and water. The size of Population and characteristics undergoes changes constantly. These changes are reflected clearly in every other aspect of our country.

5.2.7 Problems of over Population

In India, growing pressure of Population on resource base, created many socio-economic, cultural, political, ecological and environmental problems. The Population problems vary in space and time and differ from region to region. Some of the major issues created by the overpopulation in our country are overcrowding, unemployment and under employment, low standard of living, malnutrition, mismanagement of natural and agricultural resources, unhealthy environment etc.

5.3 Urbanization

The process of society's transformation from rural to urban is known as urbanization. The level of urbanization of a place is assessed based on the size of population of the towns and cities and the proportion of population engaged in non agricultural sectors. These two are closely linked to the process of industrialization and expansion of the secondary and tertiary sectors of economy.



5.3.1 Urbanization in India

The level of urbanization is measured in terms of percentage of urban population. The level of urbanization in the country has increased more than three times from 1901 to 2011. The percentage of urban population of India was 27.82% in 2001 and it rose to 31.16% in 2011 shows an increase of 3 % in a decade.

The level of urbanization varies widely among the states. Goa is the most urbanized state with 62.17% of urban population. Himachal Pradesh is the least urbanized state with 10.04% of urban population. Among the Union territories, Delhi is the most (97.50 %) urbanized region followed by Chandigarh (97.25%). Among the major states, Tamil Nadu

continues to be the most urbanized state with 48.4% percent of urban population followed by Kerala (47.7%) and Maharashtra (45.2%).

S. No.	Type of Towns/ UAs/OGs	2001 (in Numbers)	2011 (in Numbers)
1	Statutory towns	3799	4041
2	Census Towns	1362	3894
3	Urban Agglomeration	384	475
4	Out Growths	962	981
Source: Statistical data 2011			

As per 2011 Census, there are 7,935 towns (statutory and census) in the country. The number of towns has increased to 2,774, from 2001 census. In 2011, 475 Urban agglomeration (UAs) with 981 outgrowths (OGs) have been identified as Urban Agglomerations as against 384 UAs with 962 OGs in 2001 Census. Out of 468 UAs belongs to Class I category, 53 UAs have the population of one million and above each and these urban centres are known as “**Million Cities**”. These are the major urban centres in the country. Among the Million Cities, there are three major Urban Agglomerations with more than 10 million population each and are known as “**Mega Cities**”. They are Greater Mumbai UA (18.4 million), Delhi UA (16.3 million) and Kolkata UA (14.1million).

5.3.2 Impact of Urbanization

Urbanization and population concentration go hand – in – hand and are closely related to each other. A rapid rate of urbanization in a society is taken as an indicator of its economic development. Urbanization is increasing rapidly in the developing countries including India. Rural to urban migration leads to population explosion in urban areas. Metropolitan cities like Mumbai, Kolkata and Delhi have more population than that can accommodate.

The urban population of India had already crossed the 377million in 2011, which

is more than the total population of USA. By 2030, more than 50% of India's population is expected to live in urban areas. The following are the **major problems of urbanization** in India.

- It creates urban sprawl.
- It makes overcrowding in urban centres.
- It leads to shortage of houses in urban areas.
- It leads to the formation of slums.
- It increases traffic congestion in cities.
- It creates water scarcity in cities.
- It creates drainage problem.
- It poses the problem of solid waste management.
- It increases the rate of crime.

5.3.3 Human Development

Dr. Mahabub-ul-haq defined as "it is a process of enlarging the range of people's choice, increasing their opportunities for education, health care, income and empowerment. It covers the full range of human choices from a sound physical environment to economic, social and political freedom".

5.3.4 Human Development Indicators: (as per UNDP)

Population trends, health outcomes, education achievements, national income and composition of resources, work and employment, human security, human and capital mobility, supplementary indicators: perceptions of well-being and status of fundamental rights treaties are the human development indicators.

5.3.5 Measuring of Human Development

Human Development Index (HDI) is a composite index focusing on three basic dimensions of human development: i) Health - Life expectancy at birth ii) Education - Expected years of schooling for school age children and average years of schooling for the

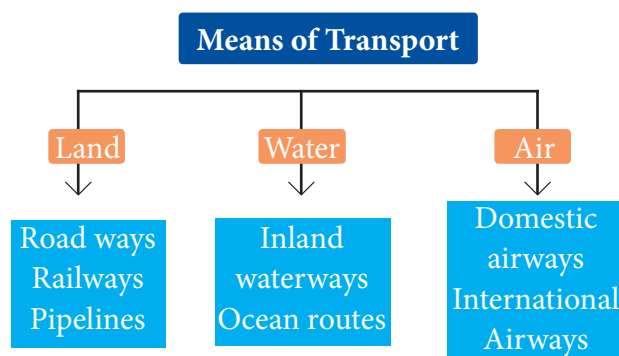
adult population. iii) Income - Measured by gross national income and percapita income.

5.3.6 Human Development Classification

HDI classifications are based on HDI fixed cut off points, which are derived from the quartiles of distributions of the component indicators. The HDI of less than 0.550 is used for low human development, 0.550 - 0.699 stands for medium human development, 0.700 - 0.799 for high human development and 0.8 or greater for very high human development.

5.4 Transportation

Transport is a system in which passengers and goods are carried from one place to another. Transport system is considered as the **lifeline of a country**. Earlier man travelled on foot or used animals for transport. With the discovery of wheel, transport was made easier and gradually different means of transport were developed. There are three major means of transport in the world.



5.4.1 Transport Network in India

Transport is one of the most important components of infrastructure and it is essential for economic development of a country, especially for a large country like India. India has a good transport network of roads, railways, airways and waterways providing necessary connectivity between different parts of the country.

5.4.2 Roadways

Roads play an important role in carrying goods and passengers for short, medium and long distances. It is highly suitable for short distance services. It is comparatively easy and cheap to construct and maintain roads. Road transport system can establish easy contact between farms, fields, factories and markets and can provide door to door transport services. Roads are the most universal mode of transport. Indian roads are cost efficient. It is used by all sections of people in the society. India has the second longest road network in the world with a total length of 56,03,293 km as of 2016. About 85% of passengers and 70 % of freight traffic are carried by roads every year.



Shershah suri built the shahi (Royal) road to strengthen and consolidate his empire from the Indus valley to the Sonar valley in Bengal. This road from Kolkata to Peshawar was renamed as **Grand Trunk**(GT) road during the British period. At present, it extends from Amristar to Kolkata. It is bifurcated into 2 segments: (a) (NH)-1 from Delhi to Amristar, and (b) NH-2 from Delhi to Kolkata.

For the purpose of construction and maintenance, roads are classified into National Highways (NH), State Highways (SH), District Roads, Rural Roads (Village roads), Border Roads and International Highways.

1. Classification of Roads in India

a) National Highways (NH)

National Highways form the most important system of road transportation in India. These highways are running through length and breadth of the country connecting capitals of states, major Ports, rail junctions, industrial and tourist centres. Ministry of Road Transport and Highways of India,



India - Roads



The important National Highways in India and label it on the outline map of India.



is responsible for the development and maintenance of National Highways in India. The total length of the National Highways (NHs) in India is 1,01,011 km which accounts for 1.8 % of the total road network length in 2016. The longest National highway is NH-7 which runs from Varanasi in Uttar Pradesh to Kanniyakumari in Tamil Nadu covering a distance of 2369 km. The shortest national highway is NH-47A, which runs from Ernakulum to Kochi port (Willington Island) covering a distance of 6 km.

b) State Highways

The state highways are usually roads that link important cities, towns and district headquarters within the state and connect them with national highways or highways of neighbouring states. These roads are administered and financed by state governments. State Highway runs to the length of 1, 76,166 km as of 2016.

c) District Roads

District Roads provide connectivity between the district and taluk headquarters with the state highways and national highways. District Roads are constructed and maintained by the Public Works Department of the states. The total length of the road of this category is 5,61,940 km(16.81%) in 2016.

d) Rural Roads (Village Roads)



Rural roads connectivity is a key component of rural development. These roads are vital for providing links in the rural areas. It links the different villages with their neighbouring towns. They are maintained by Village Panchayats. The total length of rural roads in India is 39,35,337 km as of 2016. Rural roads consist of Panchayat roads, (Zilla Parishad, Panchayat Samiti, Gram Panchayat); roads of the Pradhan Mantri Gram Sadak Yojana (PMGSY) and those constructed by the State PWDs.

Hots

Find out what are the functions of NHAI.



National Highways Authority of India (NHAI) was established in 1995. It is an autonomous body under the Ministry of Surface Transport.

e) Border Roads

These are the roads of strategic importance in border areas. They are constructed and maintained by Border Roads Organization. It was established in 1960 for the development of the roads of strategic importance in the northern and northeastern border areas. Border Roads Organization has constructed world's highest road joining Chandigarh and Leh in Ladakh. This road runs at an average altitude of 4,270 meters.

Golden Quadrilateral: 5,846 km long road of 4/6 lanes connecting, India's four metropolitan cities: Delhi-Kolkata-Chennai-Mumbai-Delhi. This project was launched in 1999.

North-South and East-West Corridors: North-South corridor aims at connecting Srinagar in Jammu and Kashmir with Kaniyakumari in Tamil Nadu (including Kochi-Salem Spur) with 4,076km long road. The East-West corridor has been planned to connect Silchar in Assam with the port town of Porbandar in Gujarat with 3,640km of road length. The two corridors intersect at Jhansi.

Hots

What are the highlights and benefits of the Golden Quadrilateral Highways?

f) Expressways

These are multi-lane good quality highways for high speed traffic. Some of the important expressways are; (i) Mumbai-Pune Road, (ii) Kolkata-Dum Dum Airport road (iii) Durgapur-Kolkata road and (iv) Yamuna expressway between Delhi and Agra.



Mumbai-Pune Road

g) International Highways

These are the roads that link India with neighbouring countries for promoting harmonious relationship with them. These highways have been constructed with an aid from world bank under an agreement with the Economic and Social Commission for Asia-Pacific (ESCAP). These roads connect important highways of India with those of the neighbouring countries such as Pakistan, Nepal, Bhutan, Bangladesh and Myanmar. In India the densest road network is found in the northern plains where it is relatively easy to construct roads. In mountainous area, it is quite difficult to construct roads. Road density is the highest in Kerala and lowest in Jammu & Kashmir.

5.4.3 Railways

Indian railway system is the main artery of the country's inland transport. Railways cater to the needs of large scale movement of traffic, both for freight and passenger, thereby contributing to economic growth. Railways are considered as the backbone of the surface transport system of India. It promotes national integration by bringing people together. It also promotes trade, tourism, education etc. Railways help in the commercialization of the agriculture sector by facilitating the quick movement of perishable goods. Its role in transporting raw materials to industries and finished goods to markets is invaluable. Indian railways network is the largest in Asia and second largest in the world. The length of Indian

railways network as of 2017 is 67,368 km with 7,349 railway stations.



The first train steamed off from Mumbai to Thane in 1853, covering a distance of 34 km. In 1951, the systems were nationalized as one unit **"The Indian Railways"**. The headquarter of Indian Railways is **New Delhi**.

For operations and management, the Indian Railways is organized into 16 zones.

- 1) Northern Railway - Delhi
- 2) North-Western Railway - Jaipur
- 3) North-Central Railway - Allahabad
- 4) North-Eastern Railway - Gorakhpur
- 5) North-East Frontier Railway - Guwahati
- 6) Eastern Railway - Kolkata
- 7) East coast Railway - Bhubaneswar
- 8) East-Central Railway - Hazipur
- 9) West-Central Railway - Jabalpur
- 10) Central Railway - Mumbai (VT)
- 11) Western Railway - Mumbai (Churchgate)
- 12) Southern Railway - Chennai
- 13) South-Central Railway - Secunderabad
- 14) South Eastern Railway - Kolkata
- 15) South-Western Railway - Hubballi
- 16) South East Central Railway - Bilaspur.

The Northern Railway accounts for the longest route length, followed by the Western Railway.

Activity

Prepare a seminar topic about "Role of Railways in Indian Economy"

On the basis of width of the track, the Indian railways fall under four categories. Broad gauge with a width of 1.676 meter, Meter gauge with a width of 1 meter and Narrow gauge with a width of 0.762 meter and Light gauge with 0.610 meter.

In recent times, many developments have taken place in the Indian railways. The arrival of Konkan Railway Corporation (KRC), Mass Rapid Transit System (MRTS), Metro and Sub-Urban railways provide easy and efficient means of transport. These are



India - Railways

very helpful in avoiding traffic congestion and over crowding in urban areas.



- The first sub-urban railway was started in 1925 in Mumbai.
- Chennai becomes the sixth Indian city with metro railway.
- Gatiman Express is the fastest operational train in India. This train connects New Delhi and Agra and touches 160 km/h. This train takes a travel time of 105 minutes to cover 200 km journey.

a) Konkan railway

One of the important achievements of Indian Railways has been the construction of Konkan Railway in 1998. It connects Roha in Maharashtra to Mangaluru in Karnataka and the track measures 760 km. It is considered as an **engineering marvel**. On its routes, the railway crosses 146 rivers and streams, nearly 2000 bridges and 73 tunnels. Asia's longest

tunnel nearly 6.44 km long is in this route. The states of Maharashtra, Goa and Karnataka are partners in this undertaking.



The rail link between Banihal in Jammu region and Qazigund in Kashmir valley was opened in 2013. This rail line passes under the Pir Panjal Range through a 11.2 km long tunnel.

b) Metro Railways in India



There are 8 cities with metro rail connectivity in India. They are Kolkata (West Bengal), Chennai (Tamil Nadu), Delhi, Bengaluru (Karnataka), Gurgaon (Haryana), Mumbai (Maharashtra), Jaipur (Rajasthan) and Kochi (Kerala). The metro in Kolkata is the first one in India. It is also called as Mass Rapid Transit System (MRTS). As of September 2018, India has 507 km of operational metro lines and 381 stations.



The state of Meghalaya has no railway network.



5.4.4 : Pipeline transport:

Pipelines provided a very convenient mode of transport to connect oil and natural gas fields, refineries and to the markets. In the past, these were used to transport water to cities and industries. Now solids can also be transported through a pipeline when converted into slurry. The initial cost of laying pipeline is high but subsequent running cost is minimum. It can be laid through difficult terrain as well as under water. It ensures steady supply of goods and reduces the transshipment losses and delays are the major advantages of pipeline transport. Oil field in upper Assam to Kanpur, from Salaya in Gujarat to Jalandhar in Punjab and gas pipeline from the Hazira in Gujarat to Jagadispur in Uttar Pradesh are the three important network large network of pipeline in the country.

5.4.5 Waterways

A waterway is an important mode of transport for both passenger and cargo traffic in India. It is the oldest and also the cheapest means of transport and most suitable for carrying heavy and bulky materials from one country to another. It is a fuel-efficient and eco-friendly mode of transport. The water transport is of two types- Inland Waterways and Ocean water ways(sea routes).

a) Inland Waterways

India has an extensive network of inland waterways in the form of rivers, canals, lakes and backwaters. It depends upon the depth and width of the waterways and the continuity of the water flow. The total navigable length of our country is 14,500 km, out of which about 5,200 km length of rivers and 4,000 km length of canals can be used by mechanized crafts. The total cargo carried by inland waterways is just about 0.1% of the total inland traffic of India. For the development, maintenance and regulation of national waterways in the country, the Inland water ways Authority was setup in 1986. The major national waterways are: National Waterway 1: It extends between

Haldia and Allahabad, measures 1620 km and includes the stretches of the Ganga-Bhagirathi-Hooghly river system. National Waterway 2: This waterway includes the stretch of the Brahmaputra river between Dhubri and Sadiya a distance of 891 km. National Waterway 3: This waterway extends between Kollam and Kottapuram in the state of Kerala. It is the first national waterway in the country with 24 hour navigation facilities along its entire stretch of 205 km.

b) Oceanic Routes

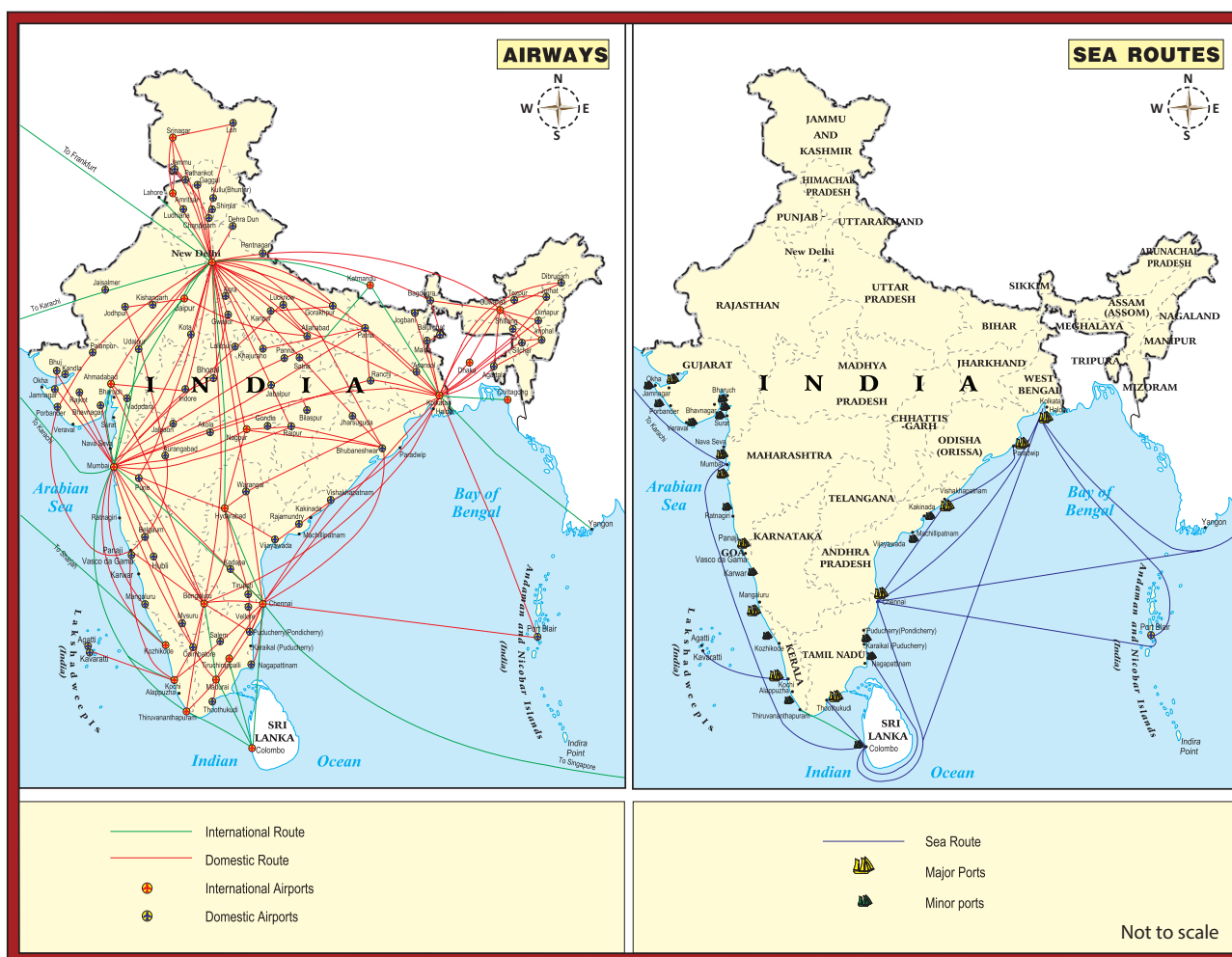
Oceanic routes play an important role in the transport sector of India's economy. About 95% of India's foreign trade by volume and 70 percent by value moves through ocean routes.

Coastal shipping plays an important role in transport of bulk goods in India. Shipping is not only the most economical mode of transport, it is also an environment friendly mode. The sea and oceanic routes are mainly used for international trade and are connected through ports. There are 13 major and 200 minor or intermediate ports in India. The major ports are administered by the Central Government and minor ports are managed and administered by various state governments. The major ports on the east coast are Kolkata (including Haldia Dock), Paradip, Visakhapatnam, Chennai, Ennore and Tuticorin. The major ports on the west coast are Kandla, Mumbai, Nhava Seva (Jawaharlal Nehru Port), New Mangalore, Marmagao and Kochi.

India has four major shipyards. Hindustan shipyard in Vishakhapatnam, Garden Reach workshop in Kolkata, Mazagaon Dock in Mumbai, Kochi Shipyard in Kochi. India is the second largest ship owning country in Asia and ranks 16th in the World.

5.4.6 Air Transport

Airways are the quickest, costliest, most modern and comfortable means of transport, Air transport facilitates connectivity on a national, regional and international scale. It has made accessibility easier by connecting difficult



terrains like high mountains and sandy deserts. It carries passengers, freight and mail. Air transport plays a key role in times of emergency as well as in the event of natural and man-made calamities like floods, epidemics and wars.

Air transport in India made a beginning on 18th February, 1918 when Henry Piquet carried a mail from Allahabad to Naini. In 1953, eight different airlines which were in operation in the country were nationalised.

Domestic Airways fly within the boundaries of a country and **International Airways** connect major cities of the world. The Indian Air lines and Air India are the two airline services run by the government of India. **Indian Air lines** provides the domestic air services and **Air India** provides international air services. Presently, there are 19 designated international airports

available in the country. These airports are managed by Airports Authority of India. Some of them are Netaji Subhash Chandra Bose International Airport, Kolkata, Chennai International Airport, Chennai, Indira Gandhi International Airport, Delhi, Chhatrapati Shivaji International Airport, Mumbai, Thiruvananthapuram International Airport, Thiruvananthapuram, Sardar Vallabh Bhai Patel International Airport, Ahmedabad, Bangalore International Airport, Bengaluru, Rajiv Gandhi International Airport, Hyderabad etc. Besides this, there are about 80 domestic airports and about 25 civil enclaves at defence air fields.

Hots

Why is air travel preferred in the north eastern states?

a) Pavan-Hans Helicopter Ltd

Pavan-Hans Helicopter Ltd has been providing Helicopter support services to the petroleum sector, including ONGC and oil India Ltd. It is a public sector company based in New Delhi. Its operations are based at the Juhu Aerodrome in Vile Parle (West) Mumbai. Pavan-Hans is a Mini Ratna-I category public sector undertaking. It often provides services to various state governments in India particularly north east India Inter Island, Ferry services in Andaman & Nicobar Islands, services to Lakshadweep Island etc.,

b) Airports Authority of India (AAI)

Airports Authority of India (AAI) was constituted in 1995. It provides security to Indian Airports. AAI under the ministry of Civil Aviation is responsible for creating, upgrading, maintaining and managing civil aviation infrastructure in India.

5.5 Communication

Communication is a process that involves exchange of information, thoughts and ideas. Technology does wonders in communication fields. Communication is categorized in to personal and mass communications.

5.5.1 Personal Communication

The exchange of information between the individuals is called personal communication. It includes post and telegraph services, telephone, mobile phone, short message services, fax, internet, e-mail etc. Personal Communication system enables the user to establish direct contact.

The Indian postal network is the largest in the world with 1,55,000 post offices. Of these more than 1,39,000 post offices are located in rural areas. The postal service was opened to the public in the country in 1837. The first Indian postal stamp was issued in 1852 in Karachi. Collecting and delivering mail is the primary function of the department of posts. It introduced the Quick Mail Service in 1975

and today it covers the entire country. The Quick Mail Service functions on the basis of the system of PIN (Postal Index Number) code which was introduced in 1972. The premium products include the Money order, e-money order, Speed Post, Express Parcel Post, Business Post, Media Post, Satellite Post, Retail Post, Greeting Post, Data Post, Speed Net and Speed Passport Services.



In 2007, the Government of India merged the Air India and Indian Airlines under National Aviation Corporation of India Limited (NACIL). In which NACIL (A) provides international services, NACIL (I) provides domestic services and services to neighboring countries in south east Asia and middle East.

Cards and envelopes are considered first-class mail and are airlifted between stations covering both land and air. The second-class mail includes book packets, registered newspapers and periodicals. They are carried by surface mail, covering land and water transport. To facilitate quick delivery of mails in large towns and cities, six mail channels have been introduced recently. They are called Rajdhani Channel, Metro Channel, Green Channel, Business Channel, Bulk Mail Channel and Periodical Channel.

India has one of the largest telecommunication networks in Asia. Apart from the urban areas more than two-thirds of the villages in India have already been covered with **Subscriber Trunk Dialing (STD)** telephone facility, while International communication can be made through **ISD (International Subscriber Dialing)**. There is an uniform rate of STD facilities all over India. Telephone is a form of oral communication. It is considered very essential for the growth of commerce. It is the most preferred form as it provides instant communication. Mobile phone, fax and internet are the other personal communication used in the country.

5.5.2 Mass Communication Systems

Mass Communication enables millions of people to get the information at the same time. It is a great way to provide education as well as entertainment. It helps in creating awareness among the people regarding various national policies and programmes. The Mass Communication Systems can provide the information to people in two methods. They are Print Media and Electronic Media.

Electronic Media: Radio broadcasting in India was started in 1923 by the Radio club of Bombay. Since then it gained immense popularity and changed the social and cultural life of people. It was named as All India Radio (AIR) in 1936 and again it was renamed as Akashwani in 1957. It broadcasts a variety of programs related to information, education and entertainment. Special news bulletins are also broadcasted on special occasions like session of parliament and state legislatures.

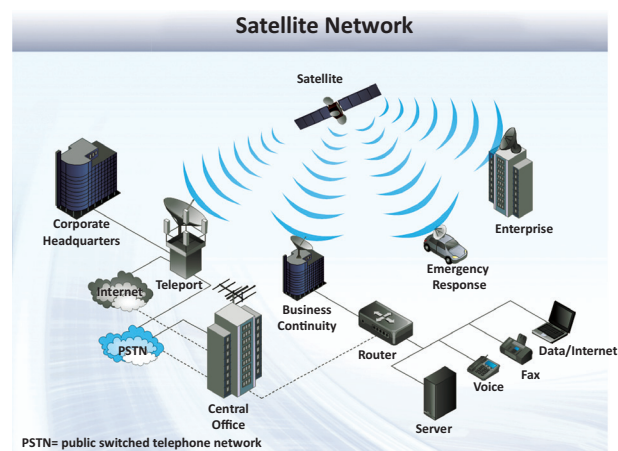
Television broadcasting has emerged as the most effective audio-visual medium for disseminating information and educating the masses. Television network in India is known as Doordarshan (DD) which started Common National Program (CNP) services and it is extended to the backward and remote rural areas.

Internet (contraction of **interconnected network**) is the global system of interconnected computer networks that use the Internet protocol suite to link devices worldwide. **Social media** are interactive computer-mediated technologies that facilitate the creation and sharing of information, ideas, career interests and other forms of expression via virtual communities and networks. With over 460 million internet users, India is the second largest online market, ranked only behind China. By 2021, there will be about 635.8 million internet users in India. Despite the large base of internet users in India, only 26

percent of the Indian population accessed the internet in 2015. This is a significant increase in comparison to the previous years, considering the internet penetration rate in India stood at about 10 percent in 2011. Furthermore, men dominated internet usage in India with 71 percent to women's 29 percent.

Print Media: Newspapers are the most common but powerful means of communication come under print media. India has many newspapers which carry information on local, national and international events to the people.

5.5.3 Satellite Communication



The use of Satellite in getting a continuous and synoptic view of larger area has made this communication system very vital for the country. Satellite images are used for weather forecasting, monitoring of natural calamities, surveillance of border areas etc. The communication through satellites emerged as a new era in communication in our country after the establishment of **Indian Space Research Organization (ISRO)** in 1969.

Satellite system in India can be grouped into two-the Indian National Satellite System (INSAT) and the Indian Remote Sensing Satellite System (IRS). The INSAT, established in 1983, is a multipurpose system for telecommunication, meteorological observation and for various other programs. The INSAT series are used for relaying signals to television, telephone, radio, mobile phone.

It is also useful in weather detection, internet and military applications.

The INSAT series, GSAT series, KALPANA-1, HAMSAT, EDUSAT are the major communication satellite used for communication purpose. GSAT-7A is the recent launch (December 19, 2018) for communication programs. INSAT-1B launched on 30th August 1983 is the first communication satellite in INSAT series.

5.6 Trade

Trade is an important phenomenon that decides the economic growth of a country. Trade is an act (or) process of buying, selling or exchanging of goods and services. The primitive method of trade was known as the Barter system where goods were exchanged for goods. Later on, money was introduced as a medium of exchange in buying and selling of goods. The difference in value between the imports and exports is called balance of trade. The situation in which the value of exports exceeds the value of imports is termed as favourable balance of trade and the reverse position is termed as unfavourable balance of trade.

Activity

Collect the names of different types of goods and differentiate it and make a table as perishable and non-perishable goods.

5.6.1 Types of Trade

Trade in general, is of two types. They are Internal and International. The trade carried on within the domestic territory of a country is termed as **Internal trade**. It is also called as **Domestic trade** or **Local trade**. Land transport (roadways and railways) plays a major role in this trade. Local currency is used in internal trade. It helps to promote a balanced regional growth in the country i.e, tea from Assam, coffee from Karnataka, Rubber and spices from Kerala, minerals from Jharkhand etc., are supplied to different parts of our country.

Trade carried on between two or more countries is called **International trade**. It is also called as external trade or foreign trade. Export and Import are two components of International trade. Export means goods and services sold for foreign currency. Import means goods and services bought from overseas producers. Waterways and Airways play a vital role in this type of trade. Foreign currency is involved in international trade. The trade between any two countries is called **Bilateral trade**. The trade between more than two countries is called **Multilateral Trade**.

Hots

Find out the major trade blocs which are useful for multilateral trade.

5.6.2 Exports

The major exports of India are tea, marine products, ores and minerals, leather products, gems and jewels, sports goods, chemicals and related products, plastics and rubber articles, articles of stones, plaster, cement, asbestos, mica, glass ware, paper and related products, base metals, optical, medical and surgical instruments, electronic items, machinery, office equipments, textiles and allied products.

5.6.3 Imports

The major imports are petroleum products, pearls, precious stones and semi-precious stones, gold and telecom instruments.

Activity

Collect the countries names and make it as a table of Bilateral trade and multilateral trade countries.

5.6.4 India's Trade Performance

The volume of India's foreign trade has increased many fold since independence. During 2008 -2009, the volume of trade was 840755 crores and it rose to 1039797 crores in 2016-2017. The import during 2008-2009 was 1374436 crores and was with a deficit of

40679 crores. The import during 2016–2017 rose to 1396352 crores and was with the deficit of 356555 crores. It reveals that not only the balance of trade is unfavourable but also the increase in the level of deficit.

Recap

- The total number of people residing in a country at a specified period of time is called the size of population of that country.
- The growth of population is determined by the birth rate, death rate and migration of people.
- The process of society's transformation from rural to urban is known as urbanization.
- Communication is classified into the personal and mass communications.
- Trade is an exchange of goods and services. Internal and International trades are its types. Import and exports are the components of an International Trade.

A-Z GLOSSARY

Barter: A direct exchange of goods between any two parties. No money is involved in the trade.

Foreign exchange: The mechanism or process by which payments between any two places operating under different national currency systems are effected without passing of actual money or gold, etc.

Harbour: An extensive stretch of deep water near the seashore where vessels can anchor securely. It is used for exports and imports of goods.

Port: The commercial part of a harbour with the facility of loading and unloading of goods and space for the storage of cargo.



EXERCISE

I. Choose the correct answer

1. The scientific study of different aspects of population is called
 - a) Photography
 - b) Demography
 - c) Choreography
 - d) Population density.



2. The state with highest literacy rate as per 2011 census is _____.
 - a) Tamil nadu
 - b) Karnataka
 - c) Kerala
 - d) Uttarpradesh.
3. Human Development is measured in terms of _____.
 - a) Human Resource Index
 - b) Per capita index
 - c) Human Development Index
 - d) UNDP
4. _____ transport provides door to door services.
 - a) Railways
 - b) Roadways
 - c) Airways
 - d) Waterways.
5. The length of Golden Quadrilateral superhighways in India is
 - a) 5846 km
 - b) 5847 km
 - c) 5849 km
 - d) 5800 km
6. The length of navigable Inland waterways in India is
 - a) 17,500 km
 - b) 5000 km
 - c) 14,500 km
 - d) 1000 km
7. The National Remote sensing Centre(NRSC) is located at _____.
 - a) Bengaluru
 - b) Chennai
 - c) Delhi
 - d) Hyderabad