

7 Transport and Communication

Fastrack Revision

► Transport

Transport involves moving goods and people from one place to another. When goods and people are transported from one place to another, they are moved from one place to another.

► Main Features of Transport Industry

Transportation system is an organised service industry. It belongs to tertiary sector:

- It is a supporting industry which satisfies the basic needs of society.
- Speedy and smooth transportation system is a boon to promote harmony and unity among people of different places of Indian society.
- During the evolution and development stages road transportation emerged as the most important transportation system. Further, during the new course of development emerged devices such as pipelines, ropeways, cableways, etc. In the meanwhile railways, inland waterways, airlines also took greater importance.

► Modes of Transport


Transportation network is required to send goods and services from the production site to the places of demand. Means of transport are divided mainly into three wings of land, water and air transport.

► Utility of Different Means of Transport

Different means of transport are used due to factors of types of goods and services which are to be transported, cost of transportation and the easiness of availability of the transport facility:

- Sea transport is better in carrying international goods.
- Short distances for goods and persons are covered by road transport.
- Road transport is good to door to door services. It is less costly and faster than any other means of transportation.
- Rail transport is the main mode of carrying goods and passengers in India.

Knowledge BOOSTER

 The rail network has an important role in trade, tourism, pilgrimage and transportation of goods over long distances.

- Indian Railways has contributed significant development of the country's economy, industries and agriculture.
- Airways are mostly suited for high value, light and perishable commodities.
- Air transport is the most expensive but fastest means of all transport systems.

- Flood-prone areas, dense forests and long sea routes are easily crossed by the air transportation.
- The movement of goods that are destroyed has been facilitated due to air transport which has led to an increase in trade and business.

► Land Transport

People, goods and services move from one location to another on land. In the land transportation are included **road transportation, rail transportation and pipelines**. All the three systems have great significance and contribute to strengthening the economy of our nation.

- **Road Transportation:** This system has acquired great significance because it provides door to door services. A developed network of roads is the main factor of development of country's tourism industry.
- Road construction is less costly than that of railway line.
- Roads are the link in the use of other transport means, as they connect railway stations, airports and seaports.
- Roads are divided into two categories of metalled and unmetalled.
- Metalled roads are all weather roads. They are made of concretes and are tar-sealed.
- Unmetalled roads are made of soil, sand, etc. Such type of roads are found mainly in rural areas. These roads are damaged heavily during rains and floods. The world's total motorable road length is only 15 million km, of which North America accounts for 33 per cent.

► Problems of Road Transport

- Problems of road transport in the world are: unmotorable During Rainy Season/Floods/ Landslides, etc.
 - In rainy seasons and in times of floods, landslides, etc. roads are not sustainable.
 - The unmetalled roads become unmotorable during rainy seasons.
 - Even the metalled roads are seriously handicapped during heavy rains and floods.
- **Problem of Traffic Congestion:** Traffic on roads has increased dramatically in recent years. Traffic congestion occurs when the road network cannot cope with the demands of traffic.
- **Huge Construction Costs:** Huge amounts of money is required for construction and maintenance of roads, which affects the quality of roads, mainly in developing countries.



- ▶ **Highways:** A highway is large road that connects big towns and cities: National highways connect far off parts of the country.
- ▶ Their construction and maintenance is done under the authority of Central Public Works Department (CPWD).
- ▶ The historic Sher Shah Suri route between Delhi and Amritsar is known as National Highway No. 1.
- ▶ National Highway No. 7 is the longest highway of the country and stretches about 2,369 km from Varanasi to Kanyakumari.
- ▶ Golden Quadrilateral Super Highways project links Delhi-Kolkata-Chennai-Mumbai-Delhi.
- ▶ There are national roads in the name of corridors. One is North-South Corridor connecting Srinagar to Kanyakumari. The second one is East-West Corridor connecting Silchar (in Assam) with Porbandar (in Gujarat).
- ▶ The border roads are constructed on the international borders of the country. These roads are constructed and maintained by the Border Roads Organisation under the Government of India. The BRO's task is to develop military-critical roads in north and north-eastern regions.
- ▶ The length of roads per 100 sq km area is called as 'road density'.
- ▶ **Border Roads:** These roads are constructed on the international borders by some specialised agency in a country. It helps in providing security to the country as in case of any conflict at the borders, sufficient action can be taken early.
- ▶ These roads also provide a good transport system to the people living in the border areas of a country.
- ▶ **Railway Transportation**
 - ▶ Indian railway transportation is the largest public sector undertaking in the country. The Railways in India provide the principal mode of transportation for freight and passengers. It brings together people from the farthest corners of the country and makes possible the conduct of business, sightseeing, pilgrimage and education. The main objective of railways' planning has been to develop the transport infrastructure to carry the projected quantum of traffic and meet the developmental needs of the economy.
 - ▶ **Advantages of Railway Transport:** The main advantages of railway transport are:
 - ▶ **Easy to Carry Bulky Goods/Passengers:** It is a cheap mode of transport for carrying bulky goods and passengers over long distances in a country or with in two continents.
 - ▶ **Important Means of Transport in Densely Populated Regions:** In the densely populated regions of the world, passenger trains carry millions of people to and from their workplaces.
 - ▶ **Booster for Economy and Industry in the Country:** Rail transport connects the commercial centres of a country and provides a boost to the economy and industry in the country. e.g. developments of railways has supported mining and manufacturing in USA.
 - ▶ **Worldwide Network in the World:** In the most densely populated nations such as India, UK, USA, Japan, etc. trains are very useful for carrying passengers and local trains play a very useful role in this field.
 - ▶ In Asia Japan, India, Bangladesh and China have a dense railway network in comparison to West Asian countries of less densely populated and having vast regions of desert.
 - ▶ In African continent the railway network is not well developed. Only South Africa is the country having about 18,000 km route where concentration of gold, diamond and copper mining activities are operated.
 - ▶ In England Channel Tunnel is operated which connects London with Paris.
 - ▶ In Russia, nearly ninety per cent of country's total transport is done by railways alone. Railways links different parts of country's vast geographical area. Underground railways also play an important role in the region of Moscow.
 - ▶ North America accounts for nearly forty per cent of the world's total rail network. In these regions, railways provides services for long distance-bulky freight.
 - ▶ Regions of East-Central USA and adjoining Canada have most dense rail network.
 - ▶ In South America, regions of Peru, Bolivia, Ecuador, Colombia, Venezuela have track rail lines from ports to interior with no inter-connecting links.
 - ▶ **Trans-continental Railways:** These railways are erected to link continents for the purpose of economic and political gains. These railways are carried on across the continent and link the two ends. This is a 7,050 km long rail line that was constructed in 1886, initially as part of an agreement to make British Columbia on the west coast join the federation of states. The most useful and important trans-continental railways are:
 - Trans-Siberian Railways
 - Trans-Canadian Railways
 - The Union and Pacific Railways
 - Australian Trans-Continental Railways and
 - The Orient Express.
 - ▶ **Transportation through Pipelines:** Through the medium of pipelines goods and materials can be transported to long distances. This system is called as pipeline transport. Without any interruption many items such as liquids, gases, water, petroleum, natural gas, liquefied coal, cooling gas or LPG etc. can be transported to different places.
 - ▶ In some developed countries such as New Zealand milk is supplied from farms to factories through the pipelines.
 - ▶ 'Big Inch' is the pipeline that carries petroleum from Gulf of Mexico to the North-Eastern States.
 - ▶ In various parts of Europe, Russia, West Asia pipelines are used to connect oil well to refineries. Pipelines are expanding very fast.
 - ▶ In Central Asia, Turkmenistan has extended its project of pipelines to Iran and also parts of China.
 - ▶ The proposed pipeline from Iran-India via Afghanistan international oil and natural gas pipeline will be the longest in the world.
- ▶ **Water Transport**
 - ▶ Water transport, comparatively is a cheaper transport than other means of transportation. It has many advantages, such as:



- ▶ Water transport brings the countries closer and creates economic cooperation and friendly relations among countries.
- ▶ Those commodities which cannot be produced within the country can be imported from abroad and used with the help of water transport.
- ▶ Water transport becomes the source of meeting the urgent need of certain commodities with foreign countries, in times of emergency caused due to flood, storm, fire, famine, earthquake, war, drought, etc.
- ▶ The energy cost of water transport is low. It does not require any route construction.
- ▶ Water transport needs only port facilities at the two ends of departure and arrival.
- ▶ **Sea Routes of the World**
 - ▶ Sea and ocean routes take bulky materials over the long distances from one continent to another continent. Large ships are equipped with radar, wireless and instruments useful in navigation. Some important sea routes are as under:
 - North Atlantic Sea Route
 - South Atlantic Sea Route
 - Mediterranean-Indian Ocean Sea Route
 - Cape of Good Hope Sea Route
 - North Pacific Sea Route and
 - South Pacific Sea Route.
 - Coastal shipping
 - Shipping canals
 - The Suez canal
 - The Panama canal
- ▶ **Inland Water Transport**
 - ▶ Inland water transport is a network of rivers, canals, creeks and lakes, which is used for water transport. Through this transportation system passengers and cargo are carried on Boats and Steamers are the medium of this transport.
 - ▶ Inland waterways are suitable to carry the heavy cargo such as coal, cement, timber and metallic ores.
 - ▶ India has one of the longest navigable and inland water networks.
 - ▶ But cargo transportation through these inland waterways is, presently less than one per cent of the total cargo payments in the country.
 - ▶ Inland Waterways Authority of India is set up in 1986 for regulation of shipping and navigation.
- ▶ **The Rhine Waterway**
 - ▶ This waterway connects the industrial areas of Switzerland, Germany, France, Belgium and the Netherlands with the North Atlantic Sea Route. This river flows through Germany and the Netherlands. It is navigable for 700 km from Rotterdam, at its mouth in the Netherlands to Basel in Switzerland.
 - ▶ The **Ruhr river** joins the Rhine from the East. It flows through a rich coalfield and the whole basin has become a prosperous manufacturing area.
 - ▶ **Dusseldorf** is the important port in this region. A large tonnage of goods moves along the stretch south of the Ruhr. This waterway is the most heavily used in the world through which more than 20,000 ocean going ships and 2,00,000 inland vessels exchange their cargoes each year.
- ▶ **The Danube Waterway**
 - ▶ This waterway rises in the Black Forest and flows Eastwards through many countries. This waterway serves Eastern Europe and is navigable up to Taurna Severin. The important commodities for export are wheat, maize, timber and machinery.
- ▶ **The Volga Waterway**
 - ▶ It is one of the most important waterways in Russia. It is navigable up to 11,200 km and drains into the Caspian Sea. It is connected to Moscow region and the Black Sea through the Volga-Moscow Canal and the Volga-Don Canal respectively.
- ▶ **The Great Lakes-St. Lawrence Seaway**
 - ▶ The Soo Canal and Welland Canal are connected to the Great Lakes of North America, namely Superior, Huron, Erie and Ontario to form an inland waterway. A unique commercial waterway in the northern part of North America is formed by estuary of St. Lawrence River, along with the Great Lakes.
 - ▶ **Duluth** and **Buffalo** are important ports of this waterway equipped with all facilities of ocean ports. Thus, large ocean going vessels navigate up the river deep inside the continent to Montreal. But due to the presence of rapids, the goods need to be transhipped to smaller vessels. To avoid this situation canals have been constructed upto 3.5m in depth.
- ▶ **The Mississippi-Ohio Waterway**
 - ▶ It links the interior parts of USA with the Gulf of Mexico in the South. Large steamers navigate through this route upto Minneapolis.
- ▶ **Limitations of Water Transport**
 - ▶ The speed of water transport is very slow. In winter season, many waterways routes are covered by ice.
 - ▶ Heavy storm creates lots of loss to persons and property travelling through water transport.
 - ▶ Water transport is full of risk and danger of pirates. Sometimes the glaciers are not visible which creates danger and accidents can happen.
 - ▶ Water transport is not complete as it is only upto one port to another.
- ▶ **Air Transport**
 - ▶ Travelling in the air through helicopter or aeroplane is called as air transport. It is a newly developed and full of adventurous means of transport. It is the fastest means of all transports. It is the most suitable means of transport for long distances, difficult terrain and relief operations. It also takes goods inside as well as outside the country.
 - ▶ In India in the year 1953, nationalisation of air services was done by the Government of India and divided it into two parts.
- ▶ **Advantages of Air Transport**
 - ▶ Air transport is the fastest means of transport in comparison to other transport services.
 - ▶ Air transport can carry costly metals without any risk.
 - ▶ In order to help the farmers, pesticides can be sprayed with the help of air transport to protect plants and diseases.
 - ▶ Air transport helps in increasing the cultivation of commercial crops, as the sale of agricultural products can be done in world market.
 - ▶ Air transport is the major source of meeting the urgent requirement during emergency caused by storm, drought, flood, earthquake, war, famine and fire.

- ▶ Air transport plays an important role in the globalisation of the economy.
- ▶ Fire caused in forest can be controlled with the help of air facilities.
- ▶ Diversification of Industries is possible through air transport.

▶ Limitations of Air Transport

- ▶ Air transportation is a costly transport and is therefore out of reach from the middle and lower classes of Indian society.
- ▶ Poor technology and crisis of new aeroplanes sometimes results in accidents.
- ▶ Heavy expense on the development of air transport facilities affects the financial status of the country.
- ▶ Foreign aircraft companies provide more and exclusive services and it reduces the attraction towards Indian air transport facilities.
- ▶ Employees working in air transports are highly salaried citizens yet they strike for raising their income, due to this passengers are suffered.

▶ Communication

- ▶ Communication is a device to convey messages from one place to another. It is the exchange of information by speaking or writing or using some other means. It is also included in social infrastructure. Under means of communication all those sources through which messages are conveyed from person to person are placed.
- ▶ Communication services include Postal, Newspapers, Magazine, Radio, TV, Telephone, etc. When communication services take human form, they become 'mass communication'.
- ▶ Different media of mass communication coordinate among themselves.
- ▶ India's postal communication system is the world's leading communication system. For the purpose of communication through paper, the land and water transport are used. Presently due to competition and technological advancement of telecom companies, the state of mobile revolution has come into existence.

▶ Means of Communication

- ▶ Under means of communication all those sources come through which messages are conveyed from person to person. The main source of communication are listed as under:
 - Postal Services
 - Magazines

- Cablegram
- Telex Services
- Teleprinter
- Microwave
- E-mail
- Television
- Radio
- Newspaper
- Fax
- Internet

▶ Satellite Communication

- ▶ Communication via satellite is known as satellite communication. We know that satellites are means of transferring information between the sender and receiver. In this process, the signal which is basically beam of modulated microwaves is sent towards the satellite. USA and USSR did a lot of space research work since 1970s, and the satellite communication is the result of this painstaking work. In the earth's orbit satellites are installed successfully. This technology has made the unit cost and time of communication invariant in terms of distance. It costs the same to communicate over 500 km as it will does over 5,000 km via satellite. India has also made great strides in satellite development.
- ▶ Aryabhata was launched on 19 April, 1979.
- ▶ Bhaskar-I was launched in 1979.
- ▶ Rohini was launched in 1980.
- ▶ Ariane Passenger Payload Experiment (APPLE) was launched on 18 June, 1981 through Arian rocket. Bhaskar, Challenger and INSAT I-B have made long distance communication. Today weather forecasting through television is a boon.

▶ Internet or Cyberspace

- ▶ It is the electronic digital world to communicate data information through computer networks. No physical movement of the sender or receiver is required.
- ▶ It is encompassed by the World Wide Web (WWW). Cyberspace can be used at anywhere such as in office, aeroplanes and sailing in the sea.
- ▶ USA, UK, Japan, China and India have the majority of the world's Internet users.
- ▶ Cyberspace has expanded the contemporary economics of the world. It is done through e-mail, e-commerce, e-learning and e-governance.
- ▶ Internet is becoming accessible to more and more people throughout the world. And through the medium of Internet we are able to have a clear radiance of Vedic philosophy of Vasudhaiva Kutumbakam and the idea of global village seems to be an emerging fact.



Practice Exercise



Multiple Choice Questions

- Q 1. carry materials like petroleum, natural gas and ores in liquefied form.
- a. Trucks b. Pipelines
c. Railways d. Roadways
- Q 2. Consider the following statements and choose the correct answer with the help of given options.
- Statement I: In recent years- ropeways, cableways and pipelines were developed as a means of transport.

Statement II: They were developed to cater to the demands of transporting specific goods under special circumstances. (CBSE SQP 2023-24)

- a. Only statement I is correct.
b. Only statement II is correct.
c. Both the statements are correct and statement II correctly explains statement I.
d. Both the statements are true but statement II does not explain statement I correctly.
- Q 3. One of the great advantages of water transportation is that it does not require:
- a. route construction b. road construction
c. rail construction d. None of these



- Q 4. Roads laid along international boundaries are called:**
 a. Border roads b. National highways
 c. International highways d. State highways
- Q 5. Air transport is the means of transportation.**
 a. easiest b. fastest
 c. slowest d. Both a. and c.
- Q 6. Highway are roads.**
 a. kaccha b. unmetalled
 c. metalled d. Both a. and b.
- Q 7. is a powerful medium of collecting information from the computer.**
 a. Satellite b. Internet
 c. Television d. Radio
- Q 8. Aryabhata was launched on:**
 a. 19 April, 1979 b. 19 April 1978
 c. 19 April, 1975 d. 19 April 1976
- Q 9. The process of converting text, pictures or sound into a digital form that can be processed by the computer is known as:**
 a. Cyber processing
 b. Computerisation
 c. Digitisation
 d. None of the above
- Q 10. The Trans-continental Stuart Highway runs between:**
 a. Darwin and Melbourne
 b. Edmonton and Anchorage
 c. Vancouver and St. John's City
 d. Chengdu and Lhasa
- Q 11. Which country has the highest density of railway network?**
 a. Brazil b. USA
 c. Canada d. Russia
- Q 12. The Big Trunk Route runs through:**
 a. The Mediterranean - Indian Ocean
 b. The North Atlantic Ocean
 c. The South Atlantic Ocean
 d. The North Pacific Ocean
- Q 13. The Big Inch Pipeline transports:**
 a. Milk
 b. Liquid Petroleum Gas (LPG)
 c. Water
 d. Petroleum
- Q 14. Which one pair of the following places is linked by Channel Tunnel?**
 a. London - Berlin b. Paris - London
 c. Berlin - Paris d. Barcelona - Berlin
- Q 15. Which of the following modes of transport can only carry freight?**
 a. Airways b. Railways
 c. Pipelines d. Roads
- Q 16. Which type of transport is most suitable for large volume of bulky materials over long distances within a region?**
 a. Airways b. Roadways
 c. Railways d. Seaways
- Q 17. The Trans-Canadian Highway connects:**
 a. Edmonton to Anchorage
 b. Vancouver to St. John's city
 c. Edmonton to Vancouver
 d. Vancouver to Anchorage
- Q 18. Trans-continental Stuart Highway passes through which of these continents?**
 a. Australia b. Europe
 c. North Canada d. Asia
- Q 19. The West-East Australian National Railway line runs across the country from:**
 a. Melbourne to Sydney
 b. Perth to Sydney
 c. Sydney to Alice
 d. Alice to Perth
- Q 20. Which of the following is the highest railway line in the world?**
 a. Peruvian Railways
 b. Darjeeling Railway
 c. Nilgiri Rail line
 d. Qinghai-Tibet Train
- Q 21. Which Railway line runs through Katanga Zambia Copper Belt?**
 a. Tanzania Railways
 b. Benguela Railways
 c. Peruvian Railways
 d. Trans-Siberian Railways
- Q 22. The orient express rail line connects which of these places in Europe and Asia?**
 a. London to Istanbul
 b. Paris to Istanbul
 c. Munich to Istanbul
 d. Zurich to Bangkok
- Q 23. After the construction of which of these canals, the travelling time between Mediterranean Sea and Indian Ocean has been greatly reduced?**
 a. Panama canal b. Suez canal
 c. Kra canal d. Java canal
- Q 24. The South Pacific Sea Route connects:**
 a. Western Europe with Australia
 b. West Asia with New Zealand
 c. Western Africa with North America
 d. South America with Oceania
- Q 25. Which river supplies freshwater to the Suez Canal?**
 a. Amazon b. Nile
 c. Congo d. Murray



Q 40. Assertion (A): The Northern Atlantic sea route is the busiest in the world.

Reason (R): 1/4th of the world's foreign trade moves on this route.

Q 41. Assertion (A): Modern communication systems have made the concept of global village a reality.

Reason (R): Modern communication systems have made interaction of people much easier cutting across place and time.

Answers

1. (b) 2. (c) 3. (a) 4. (a) 5. (b)
6. (c) 7. (a) 8. (a) 9. (c) 10. (a)
11. (b) 12. (b) 13. (d) 14. (b) 15. (c)
16. (c) 17. (b) 18. (a) 19. (b) 20. (d)
21. (b) 22. (b) 23. (b) 24. (a) 25. (b)
26. (b) 27. (b) 28. (b) 29. (b) 30. (c)
31. (c) 32. (a) 33. (b) 34. (b) 35. (b)
36. (c) 37. (b) 38. (a) 39. (b) 40. (a)
41. (a)



Passage Based Questions

Passage 1

Read the passage given below and answer the questions that follow by choosing the most appropriate option:

Most of the movement of goods and services takes place over land. In early days, humans themselves were carriers. Later animals were used as beasts of burden. With the invention of the wheel, the use of carts and wagons became important. The revolution in transport came about only after the invention of the steam engine in the 18th century. Perhaps the first public railway line was opened in 1825 between Stockton and Darlington in Northern England and then onwards, railways became the most popular and fastest form of transport in the 19th century. It opened up continental interiors for commercial grain farming, mining and manufacturing in U.S.A. The invention of the internal combustion engine revolutionised road transport in terms of road quality and vehicles (motor cars and trucks) plying over them. Among the newer developments in land transportation are pipelines, ropeways and cableways. Liquids like mineral oil, water, sludge and sewers are transported by pipelines. The great freight carriers are the railways, ocean vessels, barges, boats and motor trucks and pipelines. In general, the old and elementary forms like the human porter, pack animal, cart or wagon are the most expensive means of transportation

and large freighters are the cheapest. They are important in supplementing modern channels and carriers which penetrate the interiors in large countries. In the densely populated districts of India and China, overland transport still takes place by human porters or carts drawn or pushed by humans.

Q 1. Which of these was the most popular form of transport in 19th century?

- a. Roadways b. Airways
c. Railways d. Pipelines

Q 2. Which of the following technology revolutionised road transport?

- a. Invention of Tyres
b. Internal Combustion Engine
c. Cart and Wagon
d. Metalled Roads

Q 3. Pipelines can be used to transport which of the following:

- a. Mineral oil b. Water
c. Sewage d. All of these

Q 4. Which type of transport can be used to provide connectivity to interior of the countries?

- a. Airways b. Roadways
c. Waterways d. All of these

Answers

1. (c) 2. (b) 3. (d) 4. (b)

Passage 2

Read the passage given below and answer the questions that follow by choosing the most appropriate option:

One of the great advantages of water transportation is that it does not require route construction. The oceans are linked with each other and are negotiable with ships of various sizes. All that is needed is to provide port facilities at the two ends. It is much cheaper because the friction of water is far less than that of land. The energy cost of water transportation is lower. Water transport is divided into sea routes and inland waterways. Rivers, canals, lakes and coastal areas have been important waterways since time immemorial. Boats and steamers are used as means of transport for cargo and passengers. The development of inland waterways is dependent on the navigability width and depth of the channel, continuity in the water flow and transport technology in use. Rivers are the only means of transport in dense forests. Very heavy cargo like coal, cement, timber and metallic ores can be transported through inland waterways. In ancient times, riverways were the main highways



of transportation as in the case of India. But they lost importance because of competition from railways, lack of water due to diversion for irrigation, and their poor maintenance. The significance of rivers as inland waterways for domestic and international transport and trade has been recognised throughout the developed world. Despite inherent limitations, many rivers have been modified to enhance their navigability by dredging, stabilising river banks and building dams and barrages for regulating the flow of water.

- Q 1. Which is the most important advantage of water transport?**
- It does not require route construction.
 - It connects various continents.
 - It can carry large cargoes.
 - It does not require fossil fuels.
- Q 2. Which of the following has led to decline in waterway transport?**
- Competition from railways
 - Diversion of rivers
 - Poor maintenance of waterways
 - All of the above
- Q 3. Which of the following transport is used in navigating the dense forests?**
- Railways
 - Road transport
 - Riverways
 - Airways
- Q 4. Which of these can be transported by inland waterways?**
- Metallc ores
 - Timber
 - Cement
 - All of these

Answers

1. (a) 2. (d) 3. (c) 4. (d)

Passage 3

Read the passage given below and answer the questions that follow by choosing the most appropriate option:

The Silk Route is an early example of long distance trade connecting Rome to China – along the 6,000 km route. The traders transported Chinese silk, Roman wool and precious metals and many other high value commodities from intermediate points in India, Persia and Central Asia. After the disintegration of the Roman Empire, European commerce grew during the twelfth and thirteenth century with the development of ocean going warships trade between Europe and Asia grew and the Americas were discovered. Fifteenth century onwards, the European colonialism began and along with trade of exotic commodities, a new form of trade emerged which was called slave trade. The Portuguese, Dutch, Spaniards and British captured

African natives and forcefully transported them to the newly discovered Americas for their labour in the plantations. Slave trade was a lucrative business for more than two hundred years till it was abolished in Denmark in 1792, Great Britain in 1807 and United States in 1808.

- Q 1. The Silk Route is an early example of long distance trade connecting**
- Rome to China
 - India to China
 - Paris to Rome
 - Austria to China
- Q 2. Through Silk route, commodities that were transported:**
- Chinese silk
 - Roman wool
 - Precious metals
 - All of these
- Q 3. Slave trade began in:**
- 15th century
 - 14th century
 - 13th century
 - 16th century
- Q 4. Consider the following questions:**
- Slave trade was a lucrative business for more than three hundred years.
 - The Portuguese, Dutch, Spaniards and British captured African natives and forcefully transported them to the newly discovered Americas for their labour in the plantations.
- Both I and II are correct.
 - Both I and II are incorrect.
 - Only I is correct.
 - Only II is correct.

Answers

1. (a) 2. (d) 3. (a) 4. (d)

Passage 4

Read the passage given below and answer the questions that follow:

Air transport is the fastest means of transportation, but it is very costly. Being fast, it is preferred by passengers for long-distance travel. Valuable cargo can be moved rapidly on a worldwide scale. It is often the only means to reach inaccessible areas. Air transport has brought about a connectivity revolution in the world. The frictions created by mountainous snow fields or inhospitable desert terrains have been overcome. The accessibility has increased. The airplane brings varied articles to the Eskimos in Northern Canada unhindered by the frozen ground. In the Himalayan region, the routes are often obstructed due to landslides, avalanches or heavy snow fall.

At such times, air travel is the only alternative to reach a place. The manufacturing of aircrafts and their operations require elaborate infrastructure like hangars, landing, fuelling and maintenance

facilities for the aircrafts. The construction of airports is also very expensive and has developed more in highly industrialised countries where there is a large volume of traffic. At present no place in the world is more than 35 hours away. This startling fact has been made possible due to people who build and fly airplanes. Travel by air can now be measured by hours and minutes instead of years and months. Frequent air services are available to many parts of the world. Although, U.K. pioneered the use of commercial jet transport, U.S.A. developed largely post-war international civil aviation. Today, more than 250 commercial airlines offer regular services to different parts of the world. Recent developments can change the future course of air transport. Supersonic aircraft, cover the distance between London and New York within three and a half hour.

Q 1. Explain any two advantages of Air Transport.

Ans. The advantages of Air Transport are:
(i) It is the fastest means of transport.
(ii) Air transport can carry costly metals without any risk.

Q 2. Explain any two Limitations of Air Transport.

Ans. The limitations of Air Transport are:
(i) There is lack of aircrafts according to its requirements within the country. We have to purchase aircrafts from foreign countries at high rate.
(ii) Air transportation is a costly transport and is therefore out of reach from the middle and lower classes of Indian society.

Q 3. What distance cover the supersonic air craft?

Ans. Supersonic aircraft cover the distance between London and New York within three and a half hour.

Very Short Answer Type Questions

Q 1. Define the term 'Transport Network'. (CBSE 2015)

Ans. Several places (nodes) joined together by a sense of routes (links) to form a pattern which permits vehicular movement or flow of some commodity is called 'Transport Network'.

Q 2. What is the meaning of 'Transport'? (CBSE 2015)
OR

Define the term 'Transport'.

Ans. 'Transport' involves moving goods and people from one place to another. When goods and people are transported from one place to another, they are said to be moved from one place to another.

Q 3. On what factors does the navigability of inland waterways depend? (CBSE 2017)

Ans. The navigability of inland waterways depends on the width by stabilising the river banks and increasing

depth by regular dredging. Building dams and barrages also regulates the flow of water.

Q 4. Name the western terminal station of Trans-Canadian Railway. (CBSE 2017)

Ans. Vancouver.

Q 5. "Transport is an organised industry created to satisfy man's basic need of mobility." Support the statement. (CBSE 2022 Term-2)

Ans. "Transport is an organised industry created to satisfy man's basic need of mobility." This statement is correct because modern society requires speedy and efficient transport systems to assist in the production, distribution and consumption of goods.

Q 6. Name any one international airport of Australia.

Ans. Perth/Sydney/Darwin. (Any one) (CBSE 2017)

Q 7. Explain any two characteristics of the Volga Inland Waterway. (CBSE 2017)

Ans. The Volga Inland Waterway:
(i) It connects various industrial regions of Russia.
(ii) It connects various navigable canals.

Q 8. Mention one reason for the least development in rail facilities in West Asia. (CBSE 2017)

Ans. Reasons for least development in rail facilities in West Asia are:
(i) Vast desert area
(ii) Sparsely populated region

Q 9. Write the significance of a seaport.

Ans. The significance of a seaport is measured by the number of ships handled and how much cargo it receives.

Q 10. In which country are motorways called autobahns?

Ans. Germany. (CBSE 2015)

Q 11. Mention the two principal modes of land transportation. (CBSE 2015)

Ans. The two principal mode of land transport are railways and road transport.

Q 12. Differentiate between a node and a link.

(CBSE 2017)

Ans. A node is the meeting point of two or more routes but link is a road that joins two nodes.

Q 13. Mention the two principal modes of transportation other than land transportation. (CBSE 2015)

Ans. Waterways and Pipelines.

Q 14. Name two terminals of the Orient Express.

Ans. Paris and Istanbul.

Q 15. Which material is transported by the 'Big Inch' pipeline?

Ans. Petroleum Oil and Natural Gas.

Q 16. Name the two regions of the world having very dense network of airways.

Ans. North Eastern America and Western Europe.

Q 17. Name the most important inland waterway of Germany.

Ans. The Rhine Waterways.

Q 18. Name the seaports on each end of the Suez Canal.

Ans. (i) Port Said on its North.
(ii) Port Suez on its South.

Q 19. Which is the busiest sea route in the world?

(CBSE 2015)

Ans. Northern Atlantic Sea Route.

Q 20. Name the famous petroleum pipeline which connects the oil wells in the Gulf of Mexico to the North Eastern states in USA.

Ans. Blg Inch.

Q 21. Name the most important rail route of Russia.

(CBSE 2018)

Ans. Trans-Siberian Railway Line.

Q 22. State any two advantages of air transport in the international trade.

(CBSE 2018)

Ans. Two advantages of air transport in the International trade are:

- (i) Air transport is the fastest means of transport in comparison to other transport services.
- (ii) Air transport can carry costly metals without any risk.

Q 23. Define the term 'Trans-Continental Railway'.

(CBSE 2018)

Ans. It is a contiguous network of rail road trackage that crosses a continental landmass with terminals at different oceans or continental borders.

Q 24. Name the important inland waterway that passes through Germany and the Netherlands.

Ans. The Rhine waterway passes through Germany and the Netherlands.

Q 25. What is 'satellite communication'?

Ans. Communication via satellite is known as satellite communication. We know that satellites are means of transferring information between the sender and receiver. In this process, the signal which is basically beam of modulated microwaves is sent towards the satellite.

Q 26. Name two satellite systems of India.

Ans. Indian National Satellite System (INSAT) and Indian Remote Sensing (IRS) Satellite System.

Q 27. What is the meaning of 'Cyberspace'?

Ans. It is the electronic digital world to communicate data information over computer networks. No physical movement of the sender or receiver is required.

Q 28. What was the silk route's length?

Ans. From Rome to China, the distance was 6,000 kilometres.



Short Answer Type Questions

Q 1. What are the problems of road transport in mountainous, desert and flood prone regions?

Ans. Problems of road transport are:

(i) **In Mountainous Regions**

There is steep slope and unlevelled patterns which make it difficult to construct roads. Moreover, the costs of construction and maintenance of roads is very high. At times of landslides, roads often get damaged and repair costs are very high.

(ii) **In Desert Regions**

In deserts, constructing roads is difficult due to excessive sand. Scarce vegetation and low density of population do not encourage roads.

(iii) **In Flood Prone Regions**

In rainy season and in times of floods, roads are not sustainable. The unmetalled roads become unmotorable during rainy season. Even the metalled roads are seriously handicapped during heavy rains and floods.

Q 2. "Road transport is the most economical for short distances compared to railways in the world." Support the statement. (CBSE 2022 Term-2)

Ans. This system has acquired great significance because it provides door to door services. A developed network of roads is the main factor of development of country's tourism industry.

- (i) Road construction is less costly than that of railway line.
- (ii) Roads are the link in the use of other transport means, as they connect railway stations, airports and seaports.
- (iii) Roads are divided into two categories of metalled and unmetalled.
- (iv) Metalled roads are all weather roads. They are made of concretes and are tar-sealed.
- (v) Unmetalled roads are made of soil sand, etc.

Such type of roads are found mainly in rural areas. These roads are damaged heavily during rains and floods. The world's total motorable road length is only 15 million km. of which North America accounts for 33 per cent.

Q 3. Explain the importance of waterways as a mode of transportation. (CBSE 2022 Term-2)

Ans. The importance of water transport are:

- (i) It does not require route construction.
- (ii) It is cheaper and energy efficient because of less friction of water.
- (iii) Water transport brings the countries closer and creates economic cooperation and friendly relations among countries.



- (iv) Those commodities which cannot be produced within the country can be imported from abroad and used with the help of water transport.

Q 4. What are the different roles played by pack animals in transportation in different parts of the world?

Ans. Pack animals are those animals which are used as a means of transportation. In general, they are the most expensive means of transportation and large freighters are the cheapest. The different roles played by pack animals in transportation in different parts of the world are:

S. No.	Animals	Role Played
1.	Horses	They are used as a draught animals even in Western countries.
2.	Dogs and reindeer	They are used in North America, North Europe and Siberia to draw sledges over snow-covered ground.
3.	Mules	They are preferred in mountainous regions.
4.	Camels	They are used for caravan movement in deserts.
5.	Bullocks	They are used for pulling carts in India.

Q 5. Evaluate the role and importance of roads in the economic development of India?

(CBSE SQP 2022 Term-2)

Ans. India has the second largest road network in the world.

The main importance of roads in economic development of India are as follows:

- (i) It provides better connectivity between Rural and Urban areas and hence advancement of Rural India occurs.
- (ii) During the transportation of goods from ports to their destination it is very important to have better road connectivity so that time, fuel and money can be saved and hence ultimate economic development occurs.
- (iii) To link every remotest area (Jammu and Kashmir, Northeast part, mountainous regions, etc) with the mainstream of economy it's very much important to have better connectivity so that overall development of those people can be ensured.

Q 6. What are the important characteristics of border roads?

Ans. The important characteristics of border roads are:

- (i) These roads are constructed on the international borders by some specialised agency in a country.
- (ii) These roads are important for strategic as well as defence purposes as they help in providing

access to strategically important areas along the borders.

- (iii) These roads are important for the economy of the people living along the border areas as these are used to supply goods and connect the border areas with major cities.
- (iv) It helps in providing security to the country as in case of any conflict at the borders, sufficient action can be taken early.
- (v) These roads also provide a good transport system to the people living in the border areas of a country.

Q 7. "Oceanic routes play an important role in the transport sector of India's economy." Examine the statement. (CBSE 2022 Term-2)

Ans. Three characteristics of water transport are:

(i) **Doesn't Require Route Construction**

One of the great advantages of water transportation is that it does not require route construction. The oceans are linked with each other and are negotiable with ships of various sizes.

(ii) **Cheap Mode of Transport:** It is much cheaper than other modes of transport because:

- (a) Friction of water is far less than that of land.
- (b) Energy cost of water transportation is lower.

(iii) **Suitable for Heavy Cargo:** Very heavy cargo like coal, cement, timber and metallic ores can be transported through inland waterways. The reasons for less traffic on South Atlantic Sea route are:

- (a) There is limited development and population in South America and Africa. Only Southeastern Brazil and Plata estuary and parts of South Africa have large scale industries.
- (b) There is little traffic on route between Rio de Janeiro and Cape Town because both South America and Africa have similar products and resources.

Q 8. Explain any three points of economic significance of 'Trans-Siberian Railways'.

Ans. Trans-Siberian Railways is the major rail route of Russia. It runs from St. Petersburg in the west to Vladivostok on the Pacific coast in the east passing through Moscow, Ufa, Novosibirsk, Irkutsk, Chita and Khabarovsk.

Economic Significance of Trans-Siberian Railways are:

- (i) It links the Asian region with the West European markets.
- (ii) It runs across the Ural mountains where Chita is an important agro centre and Irkutsk is a fur centre.

- (iii) It has several other connecting links to the South, namely to Odessa (Ukraine), Baku on the Caspian coast, Tashkent (Uzbekistan), Ulan Bator (Mongolia) and Shenyang (Mukden), Beijing in China. So, economies of these regions have also been integrated by the network.

Q 9. Mention the major benefits of the rail transport in the world. (CBSE 2023)

OR

Write any four advantages of rail transport.

Ans. The four advantages of rail transport are:

- (i) **Easy to Carry Bulky Goods/Passengers:** It is a cheap mode of transport for carrying bulky goods and passengers over long distances in a country or within two continents.
- (ii) **Important Means of Transport in Densely Populated Regions:** In the densely populated regions of the world, passenger trains carry millions of people to and from their work places.
- (iii) **Booster for Economy and Industry in the Country:** Rail transport connects the commercial centres of a country and provides a boost to the economy and industry in the country. e.g. developments of railways has supported mining and manufacturing in USA.
- (iv) **Connecting Link between Continents:** With the construction of trans-continental railways, movement of goods and people has become easier. Thus, these have provided a connecting link between continents.

Q 10. Mention the three major regions of the world which have a very dense network of railways.

Ans. The three major regions of the world which have a very dense network of railways are:

- (i) **North America:** It has one of the most extensive rail networks accounting for nearly 40% of the world's total. The most dense railway network is found in the highly industrialised and urbanised region of East Central USA and adjoining Canada.
- (ii) **Asia:** The rail network is dense in the thickly populated areas of Japan, China and India.
- (iii) **Europe:** Europe has one of the most dense rail networks in the world. There are about 4,40,000 kms of railways, most of which is double or multiple tracked. The important rail heads are London, Paris, Brussels, Milan, Berlin and Warsaw.

Q 11. State any six characteristics of Suez Canal.

Ans. The characteristics of Suez Canal are:

- (i) **Provides a Connecting Link:** This canal had been constructed in 1869 in Egypt between Port Said in the North and Port Suez in the South linking the Mediterranean Sea and the Red Sea.
- (ii) **Provides a New Gateway to the Indian Ocean:** It provides a new gateway to Europe to the Indian Ocean and thus helps in improving trade and commerce between the regions.

- (iii) **Reduces Direct Sea Route Distance:** It reduces direct sea-route distance between Liverpool and Colombo compared to the Cape of Good Hope Route.

- (iv) **Sea Level Canal Without Locks:** It is a sea level canal without locks which is about 160 km and 11 to 15m deep.

- (v) **Heavy Tolls:** The tolls are so heavy that some find it cheaper to go by the Longer Cape Route whenever the consequent delay is not important.

- (vi) **Joined by Freshwater Canal From the Nile:** A navigable fresh water canal from the Nile also joins the Suez Canal in Ismailia to supply fresh water to port Said and Suez.

Q 12. Name any two Inland Waterways of Europe. Explain any two factors that influence inland waterways.

Ans. The two Inland waterways of Europe are:

- (i) **The Rhine Waterways:** The Rhine river flows through Germany and the Netherlands. It is navigable for 700 kms from Rotterdam, to its mouth in the Netherlands to Basel in Switzerland. The Ruhr river joins the Rhine from the east. It connects the industrial areas of Switzerland, Germany, France, Belgium and the Netherlands with the North Atlantic sea route.
- (ii) **The Danube Waterway:** This waterway rises in the Black Forest and flows Eastwards through many countries. This waterway serves Eastern Europe and is navigable up to Tarna Severin. The important commodities for export are wheat, maize, timber and machinery.

Q 13. Why is Rhine the world's most heavily used waterway? Explain any three reasons.

Ans. The Rhine river flows through Germany and the Netherlands. The Ruhr river joins the Rhine from the east.

The three reasons because of which the Rhine is the world's most heavily used waterways are:

- (i) It flows through a rich coalfield and the whole basin has become a prosperous manufacturing area.
- (ii) Huge tonnage moves along the stretch South of the Ruhr.
- (iii) Each year, more than 20,000 ocean going ships and 2,00,000 Inland vessels exchange their cargoes.
- (iv) It connects the industrial areas of Switzerland, Germany, France, Belgium and the Netherlands with the North Atlantic sea route.

Q 14. What are the reasons for the increasing popularity of air transport in the recent time, in spite of its high cost?

Ans. Air transport is the fastest mode of transport which has revolutionised the world connectivity. It is very costly, still it is becoming popular due to these reasons:



- (i) Valuable and perishable goods can be easily transported rapidly on a world wide scale from one country to another.
- (ii) The areas which were previously inaccessible have now become easily accessible due to air transport. For example, Himalayan region, Alaska region, etc.
- (iii) Travelling time has also reduced from months to days and hours.
- (iv) Air transport provides strategic and military advantage as tactical operations can be carried out easily. For example, US strikes in Iraq.

Q 15. State any three advantages of satellite communication in India.

OR

Satellites and computers have brought revolutionary changes in the present life of the people. Elaborate the statement with three suitable examples. *(CBSE SQP 2022 Term-2)*

OR

"In India Satellite communication has become vital for the country." Examine the statement.

(CBSE 2022 Term-2)

Ans. Three advantages of satellite communication in India are:

(i) Connect Remote Corners of Globe

Artificial satellites are successfully deployed in the earth's orbit to connect even the remote corners of the globe with limited on site verification. These have rendered the 'unit cost' and time of 'communication' invariant in terms of distance.

(ii) Used in Weather Forecasting

Satellites help in forecasting of weather and thus monitoring of natural calamities becomes easy. Satellites are used to forecast monsoon rains in India. This helps farmers in planning their crops during monsoon.

(iii) Important Mode of Communication: The use of satellite in getting a continuous and synoptic view of larger area has made satellite communication very useful.

Q 16. Write briefly about Inter-continental air routes.

Ans. In the Northern Hemisphere, there is a distinct east-west belt of inter-continental air routes. Dense network exist in Eastern USA, Western Europe and South-East Asia. USA alone accounts for 60% of the airways of the world. Some nodal points where air routes converge or radiate to all continents are: New York, London, Paris, Amsterdam, Frankfurt, Rome, Moscow, Karachi, New Delhi, Mumbai, Bangkok,

Singapore, Tokyo, San Francisco, Los Angeles and Chicago. Africa, Asiatic part of Russia and South America lack air services. There are limited air services between 10-35 latitudes in the Southern hemisphere due to sparser population, limited landmass and economic development.

Q 17. What is cyberspace? Describe any two advantages of internet.

Ans. Cyberspace: It is the electronic digital world to communicate data information over computer networks. No physical movement of the sender or receiver is required. It is encompassed by the internet such as World Wide Web (WWW). The advantage of cyberspace/Internet are:

(i) Expansion of Contemporary Economic and Social Space of Humans: Internet has expanded the contemporary economic and social space of humans through e-mail, e-commerce, e-learning and e-governance.

(ii) Made the World a Global Village

Internet communication has connected more and more people across the world. It has made the concept of global village a reality.

Q 18. In modern times, communication has become specialised. Explain.

Ans. (i) Earlier, the means of communication were not specialised. Technology was not that well developed.

- (a) People used the transport system to transport goods and even move 'messages' through men.
- (b) Birds like pigeons were used as carriers of messages from one place to another.
- (c) Gradually, different modes of communication like pagers, telegraph, telephones, etc. came into existence.

(ii) Now, today the means of communication have become specialised. Technological development has played a major role in development of means of communication.

- (a) New forms of communication like mobile phones, Internet, satellite communication, television, radio, etc. have enhanced the connectivity and turned the concept of 'global village' into a reality.
- (b) There is a phenomenal pace of development. The first major breakthrough is the use of Optic Fiber Cables (OFC). Telephone companies all over the world upgraded their copper cable systems to include Optic Fiber Cables. These allow large quantities of data to be transmitted rapidly, securely and virtually error free.

Thus, in modern times, communication has become specialised.

Q 19. Air transport has brought about a connectivity revolution in the world. Explain this statement.

Ans. Air transport has brought a connectivity revolution in the world due to following reasons:

- (i) At present, no place in the world is more than 35 hours away due to developments in air transport.
- (ii) More than 250 commercial airlines offer transport services throughout the world.
- (iii) The areas which were previously inaccessible due to difficult terrain and harsh climate can now be accessed easily by air transport services.
For example, the airplanes supply various items of common use to the Eskimos living in regions where the ground is permanently frozen and roads and railways cannot reach there.
- (iv) The areas in mountain regions, which become inaccessible due to landslide and avalanches can be reached by air transport.
- (v) The travelling time has reduced from months to days and hours.
- (vi) Two places in the world are not much far away in spite of the distance between them with new developments such as supersonic aircrafts, the distance between two places will reduce greatly and air transport will become more convenient.

Q 20. Name the canal that connects the Atlantic Ocean in the East to the Pacific Ocean in the West, write any four characteristics.

Ans. The canal that connects the Atlantic Ocean in the east to the Pacific Ocean in the west is 'The Panama Canal'.

Four characteristics of the Panama Canal are:

- (i) **Construction:** It has been constructed across the Panama Isthmus between Panama city and colon by the US government which purchased 8 km of area on either side and named it the Canal Zone.
- (ii) **Length:** The Canal is about 72 km long and involves a very deep cutting for a length of 12 km.
- (iii) **Lock System:** It has six lock system and ships cross the different levels (26m up and down) through these locks before entering the Gulf of Panama.
- (iv) **Brings Areas Closer**
It shortens the distance between New York and San Francisco by 13,000 km by sea. The distance between Western Europe and the west coast of USA and North Eastern, Central USA, East and South East Asia is shortened.

Q 21. Name the longest Trans-Continental Railway. Describe its any four features. (CBSE 2015)

Ans. The longest Trans-Continental Railway is the Trans-Siberian Railway. It runs from St. Petersburg in the west to Vladivostok on the Pacific coast in the east. It is Asia's most important route.

Four features of Trans-Siberian Railways are:

- (i) It connects various important commercial and industrial centres such as Moscow, Ufa, Irkutsk, Chita, etc.
- (ii) It is double tracked and electrified transcontinental railway in the world. This has helped in opening up its Asian region to West European markets.
- (iii) It runs across the Ural Mountains where Chita is an important agro centre and Irkutsk is a fur centre.
- (iv) It also connects links to the south, namely, to Odessa (Ukraine), Baku on the Caspian coast, Tashkent (Uzbekistan), Ulan Bator (Mongolia), and Shenyang (Mukden) and Beijing in China.

Q 22. Explain the importance of 'Communication Services' in the world. (CBSE 2016)

Ans. Communication is the exchanging of information, by speaking, writing or using some other means. For example, Telephone, Television, Satellites, Internet etc.

Communication services are important because of the following reasons:

- (i) Communication connects the people in different parts of the world. They can exchange information, ideas and make it easy to send or receive message.
- (ii) Communication through Optic Fibre Networks (OFN) allows large amount of data's to be transmitted rapidly, securely and error free.
- (iii) Development of communication networks has become a crucial factor in developing urbanisation in various countries, e.g. in America.
- (iv) In developing countries, use of cell phones has made it possible to connect the rural areas of the country.
- (v) New technologies such as satellite communication has made it possible to communicate with anyone anywhere in the world. Thus, communication has become faster.
- (vi) The use of Internet for communication has made the concept of global village a reality.

Q 23. What is transport? How do the factors of demand and routes affects the transport services throughout the world? Explain with examples. (CBSE 2015)

Ans. Transport involves moving goods and people from one place to another. When goods and people are transported from one place to another, they are moved from one place to another.

The factors of demand and routes that affect the transport services throughout the world are:

- (i) International movement of goods is handled by ocean freighters.
- (ii) Road transport is cheaper and faster over short distances and for door-to-door services.
- (iii) Railways are most suited for large volumes of bulky materials over long distances within a country.
- (iv) High-value, light and perishable goods are best moved by airways.

Q 24. Explain any five characteristics of rail transport of Europe. (NCERT)

Ans. The characteristics of rail transport in Europe are:

- (i) Rail transport in Europe is characterised by its diversity, both technical and infrastructural.
- (ii) Europe was the location of the world's first railways.
- (iii) The European Union aims to make cross-border operations easier as well as to introduce competition to national rail networks. Industrial Revolution, has led to a high level of cooperation between European countries in developing and maintaining rail network.
- (iv) Rail infrastructure, freight transport and passenger services are provided by a combination of local and national governments and private companies.
- (v) The modern European network spans the entire continent and provides passenger and freight movement. There are significant high speed rail passengers networks. It contributes to the improvement of the people's standard of living in these countries.
- (vi) As a result, per capita trade shows a country's economic development. However, despite the fact that total commerce volume is high in countries with big populations, per capita trade is low.



Long Answer Type Questions

Q 1. Elucidate the statement "In a well managed transport system, various modes complement each other."

Ans. "In a well managed transport system, various modes complement each other". This statement is correct due to given reasons:

- (i) Transport is the facility or service which provides movements of goods and persons by using various modes. In the important modes of transport system are land, air, water and pipelines.

- (ii) During rainy seasons and floods, when roads become unmotorable, the high embankment of rail tracks and the efficient maintenance of railway transport service is an effective solution. Here, we can see railways complementing roadways.
- (iii) When railways cannot serve the needs of vast and developing countries at a low cost, roads play a vital role in solving this problem by covering side distances and at a cheap price.
- (iv) When costs of construction have to be saved and long distances to be traversed, water transport play an important role.
- (v) When construction of roads and railways becomes difficult in inaccessible areas like mountains, deserts, etc, airways becomes the means to reach inaccessible areas.
- (vi) When disasters like tsunamis, floods, landslides, etc. occur and roadways and railways get damaged, airways becomes the best possible option that can provide rescue in such situations.
- (vii) In times of war, airways prove to be of strategic importance like Air strikes by U.S. and British forces in Iraq.
- (viii) Pipelines are extensively used to transport liquids and gases such as water, petroleum and natural gas for an uninterrupted flow. Thus, all modes of transportation, though being independent in nature complement each other as well.

Q 2. Mention the major problems faced by the global road transport in mountainous and hot desert areas.

OR

(CBSE 2022)

Explain the merits and demerits of road transport in the world.

Ans. The merits of road transport are:

(i) Less Capital Outlay and Suitable for Short Distance

(a) A relatively much lower capital investment is required in road transport, compared to other modes of transport such as railways and air transport which are much costlier.

(b) It is best suited for short distance travel.

(c) Delays in transit of goods, due to intermediate loading and handling, can be avoided as goods can be loaded direct into a road vehicle and transported straight to their places of destination.

(ii) Door-to-Door Services: Road transport, offers the best connecting among all the means of transport as it offers door to door services.

(iii) Flexible: In road transport, routes and timings can be adjusted and changed to suit individual requirements with ease.

(iv) Transport of Perishable Goods: Road transport is best suited for transport of perishable goods like milk, vegetables, etc.

(v) **Feeder to other Means of Transport:** Whether cargo is transported via air, rail or water, the movement of goods begins, and ultimately ends by road transport, that picks up cargo from the source and delivers the goods to the final destination.

Road and motor transport are the feeder connectivity transport to all other modes of transport such as railways, ships and airways. The demerits of road transport are:

(i) Vulnerable to Seasonal and Weather Impacts

Road transport infrastructure and travel is vulnerable to weather changes and seasons. E.g.; during rains or floods, roads become unfit and unsafe for use.

(ii) Lack of Organisation and Structure

Road transport is irregular and undependable. The rates charged for transportation are also random, unstable and unequal. Thus, road transport is a much less organised or structured than its counterpart transport industries, air, rail and water, that are way more organised and structured.

(iii) Accidents and Breakdowns: There is a high risk of accidents and breakdowns in case of road transport. This is because mostly people use roadways to travel leading to traffic and therefore accidents.

(iv) Not the Best Option for Long Distance: Road transport is not very suitable for transporting low priced and heavy cargo over long distances as it proves to be expensive.

(v) Difficulty in Construction: Roads are difficult to construct in various areas such as mountains. Here specialised agencies are required to construct roads.

(vi) Slow Speed: Road transport is not as fast as rail transport or airways. Moreover, road transport suffers from traffic and congestion which makes road transport slow.

COMMON ERROR

Many students are generally confused as to which is a better means of transport, road or railways.



TIP

Road transport is better for short distance. But for long distance rail transport is better.

Q 3. Describe the journey of development of land transport from the days of humans as carriers and the cable ways of today. (CBSE 2015)

Ans. Land transport is an important and useful mode of transport.

(i) In older days, human and animals were important carriers. For example, Palanquin (palki/doli) was

used to carry brides by four persons (Kahars in North India).

(ii) Later, animals were used as means of transport. For example, mules, horses, camels, oxen, etc. were used in rural areas.

(iii) With the invention of the wheel, the use of carts and wagons became important.

(iv) The 18th century marks the revolution in transport which came about only after the invention of the steam engine.

(v) In the 19th century, railways became the most popular and fastest form of transport with the opening of the first public railway line in 1825 between Stockton and Darlington in Northern England.

(vi) In USA, the development of railways also facilitated commercial grain farming, mining and manufacturing in the continental interiors of the country.

(vii) The newer forms of land transportation have emerged in recent times. It includes pipelines, ropeways and cableways. These are faster and more efficient as compared other means of transport.

Q 4. Which continent has the highest road density? Why do traffic congestions occur on road? Explain any three measures to solve the problem of traffic congestion.

Ans. North America has the highest road density. The world's total motorable road length is only about 15 million km, of which North America accounts for 33 per cent.

Traffic congestion occurs when the road network cannot cope with the demands of traffic.

E.g. Peaks (high points) and troughs (low points) of traffic flow can be seen on roads at particular times of the day; For example, peaks occurring during rush hour before and after work. It is during these peaks that traffic congestion occurs.

Three measures to solve the problem of traffic congestion are:

(i) Higher Parking Fee

Parking fee for private vehicles must be increased. If parking fee for private vehicles is increased, it will discourage the use of private vehicles and thus reduce congestion on roads.

(ii) Improved Public Bus Service

Public bus services must be improved and their use must be encouraged. It will encourage people to avoid using private vehicles which cause traffic congestion on roads. Moreover, public transport connectivity should be enhanced.

(iii) **Expressways**

Highways and expressways must be constructed. These being wide provide seamless connectivity to people and also accommodate more number of vehicles. This will reduce traffic congestion on roads.

Q 5. Which means of transport is extensively used for carrying water, petroleum, natural gas and other liquids? Explain its characteristics. Describe the network of this means of transport in the world.

Ans. The means of transport that is extensively used for carrying water, petroleum, natural gas and other liquids is 'Pipelines'.

The characteristics of pipelines are described below:

- (i) Pipelines are the most convenient and efficient mode of transporting liquids and gases over long distances.
- (ii) Even solids can also be transported by pipelines by converting them into slurry.
- (iii) Though the initial set up cost is high, but if once set up, they transport liquids and gases very cheaply.
- (iv) There is less risk of accidents in case of pipelines.
- (v) They do not require much space.
- (vi) They are energy efficient and environment friendly.

Description of pipeline network in the world:

- (i) In New Zealand, milk is being supplied through pipelines from farms to factories.
- (ii) In U.S.A. there is a dense network of oil pipelines from producing areas to the consuming areas.
- (iii) About 17% of all freight per tonne-km is carried through pipelines in U.S.A.
- (iv) In Europe, Russia, West Asia and India, pipelines are used to connect oil wells to refineries, and to ports or domestic markets. E.g. Turkmenistan in Central Asia has extended pipelines to Iran and also to parts of China.
- (v) The proposed Iran-India pipeline via Pakistan will be the longest in the world.

Q 6. "The Suez and the Panama Canals are two vital man-made navigation canals, which serve as the gateways of commerce for both the Eastern and Western Worlds". In the light of this statement, explain the economic significance of these two canals.

Ans. **The Suez Canal:** This canal had been constructed in 1869 in Egypt between Port Said in the North and Port Suez in the South linking the Mediterranean Sea and the Red Sea.

Its economic significance is described below:

- (i) It is the fastest and most direct maritime trade link between Asia and Europe. Approximately 12% of global trade passes through the Suez

Canal, representing 30% of all global container traffic.

- (ii) It is a significant route for energy, commodities, consumer goods and components from Asia and the Middle East to Europe.
- (iii) It is important for economies of Europe and African nations as ships carrying essential goods part through this Canal.
- (iv) Railway lines have also been constructed from Suez canal to supply goods and improve trade even in the interior parts of the region. It has boosted the economy of the region.

The Panama Canal: This canal connects the Atlantic Ocean in the east to the Pacific Ocean in the west. It has been constructed across the Panama Isthmus between Panama city and Colon by the U.S. government which purchased 8 km of area on either side and named it the Canal Zone.

Its economic significance is described below:

- (i) It is important for the economies of North America as well as Latin America as it is used for carrying out trade between these regions.
- (ii) Many European countries use the Panama canal to supply their products to the Latin American countries.
- (iii) The distance between Eastern and Western coasts of USA is significantly reduced due to the opening up of this canal. It has resulted in boosting the US economy and easing World Trade.
- (iv) There has been a significant reduction in the distance between Western Europe and America. This results in improvements in their trade and commercial relations.

Q 7. What is the significance of inland waterways? Explain the three factors responsible for the development of inland waterways in the world. Explain the significance of Rhine Inland waterways.

Ans. The significance of inland waterways can be understood from the following points:

- (i) They are suitable for transportation with the help of rivers, canals, lakes, etc.
- (ii) They are used for transport of cargo and passengers.
- (iii) Rivers are the only means of transport in dense forests.
- (iv) Very heavy cargo like coal, cement, timber and metallic ores can be transported through inland waterways.

Three factors responsible for the development of inland waterways in the world are:

- (i) **Navigability Width and Depth of Channel:** This means the width and depth of the channel that makes navigation possible.

- (ii) **Continuity in Water Flow:** It refers to continuous flow of water throughout the years so that ships, boats can easily move in the waterways.
- (iii) **Transport Technology in Use:** It refers to development of proper technology so that very heavy cargo like coal, timber, metallic ores can also be easily transported through inland waterways.

The significance of Rhine Inland waterways can be understood from the following points:

- (i) It is world's heavily used waterway with more than 20,000 ocean going ships and 2,00,000 inland vessels exchange their cargo on this route.
- (ii) Huge tonnage moves along this stretch of the waterway.
- (iii) The river Rhine is navigable for 700 km from Rotterdam in Netherlands to Basel in Switzerland.
- (iv) It flows through a rich coal field which has made the whole region prosperous manufacturing area.
- (v) The waterway links the industrial areas of Germany, France, Switzerland, Belgium, Netherlands with North Atlantic sea routes.

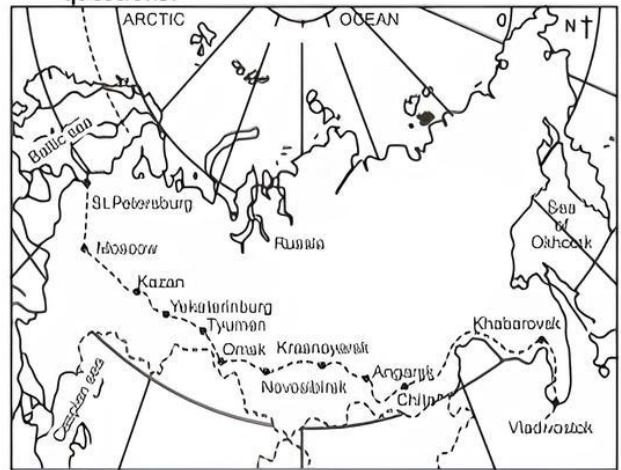
Q 8. Analyse the distribution of highways in the world.

Ans. The distribution of highways region wise in the world is described as under:

- (i) **North-America**
 - (a) Highway density is high here. It is about 0.65 km per sq km.
 - (b) Cities located on the Pacific Coast (West) are well connected with those of the Atlantic Coast (East).
 - (c) Cities of Canada in the North are linked with those of Mexico in the South.
- (ii) **Australia:** The Trans-Continental Stuart Highway connects Darwin (North Coast) and Melbourne via Tennant Creek and Alice Springs in Australia.
- (iii) **Europe:** Europe has a large number of vehicles and a well developed highway network.
- (iv) **Russia:** A dense highway network is developed in the industrialised region west of the Urals with Moscow as the hub. The important Moscow-Vladivostok Highway serves the region to the East.
- (v) **China:** Highways Criss-Cross the country connecting all major cities such as Tsungtso, Shanghai, Guangzhou and Beijing. A new highway links Chengdu with Lhasa in Tibet.
- (vi) **India:** There are many highways linking the major towns and cities, e.g. NH-7 links Varanasi with Kanyakumari. Golden Quadrilateral links New Delhi, Mumbai, Chennai and Kolkata.
- (vii) **Africa:** A highway joins Algiers in the north to Conakry in Guinea. Similarly, Cairo is also connected to Cape Town.

Map Based Questions

Q 1. Study the map given below and answer the questions:



- (i) Name this Trans-Continental Railway Line.
- (ii) Which two oceans are connected by this Trans-Continental Railway?
- (iii) How has this railway line helped in the economic development of this region? (CBSE 2018)

- Ans.**
- (i) This is Trans-Siberian Railway Line.
 - (ii) Pacific Ocean in the East and Atlantic Ocean in the West.
 - (iii) It is the most important route in Asia and the longest (9,332 km) double-tracked and electrified trans-continental railway in the world. It has helped in opening up the Asian region to West European markets. It runs across the Ural mountains and Yenisei rivers. Chita is an important agro-centre and Irkutsk, a fur centre.

Q 2. Study the map given below carefully and answer the following questions:



- (i) Name the railway line shown on this map.
- (ii) Name the terminal station of this railway along the Atlantic coast.
- (iii) Why is this railway line known as economic artery of the country through which it passes?

- Ans. (i) Trans-Canadian Railway line has been shown on this map.
 (ii) Halifax is the terminal station of this railway along the Atlantic coast.
 (iii) It connects Quebec-Montreal Industrial region

with the wheat belt of the Prairie region and the coniferous forest region in the North. A loop line from Winnipeg to Thunder Bay connects this line with one of the important waterways. That's why it is called economic artery of Canada.

Q 3. Study the map given below carefully and answer the following questions:



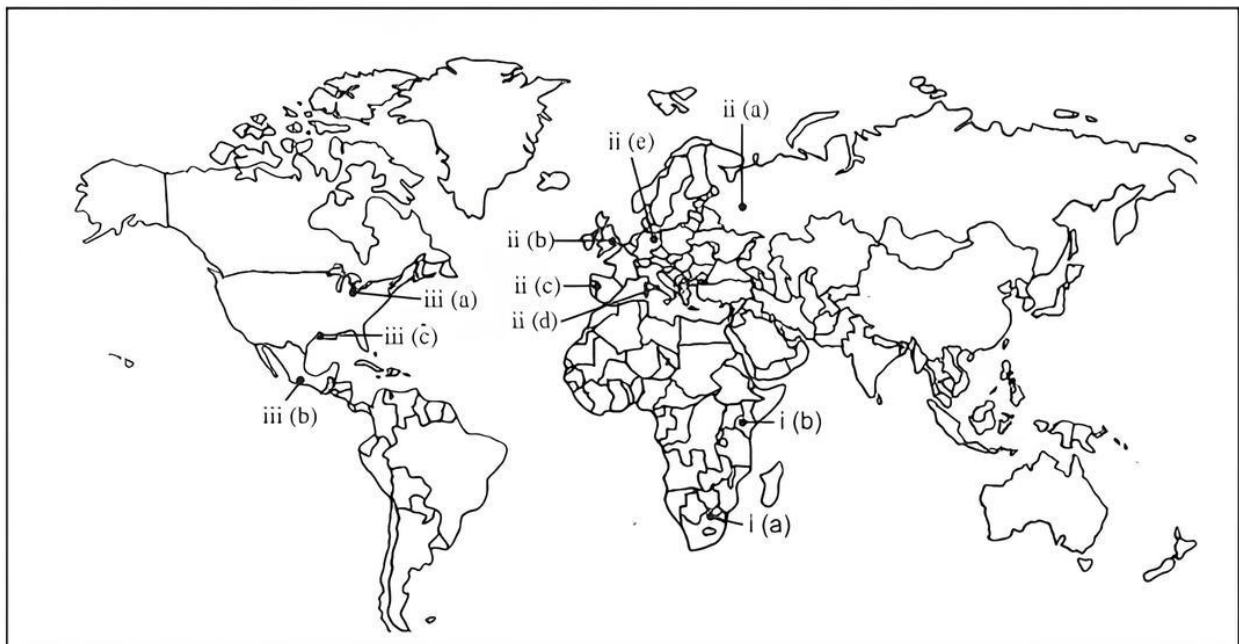
- (i) Name the railway line shown in the given map.
 (ii) Which are the two terminal stations of this railway line?
 (iii) Name the ports located on the coast of Spencer Gulf through which this railway line passes.

- (ii) Perth and Sydney are two terminal stations of Australian trans-continental railway line.
 (iii) Port Augusta and Port Pirie are two ports located on the coast of Spencer Gulf through which this railway line passes.

Ans. (i) Australian Trans-continental railway line is shown in the given map.

Q 4. On the political map of the world, identify the following:

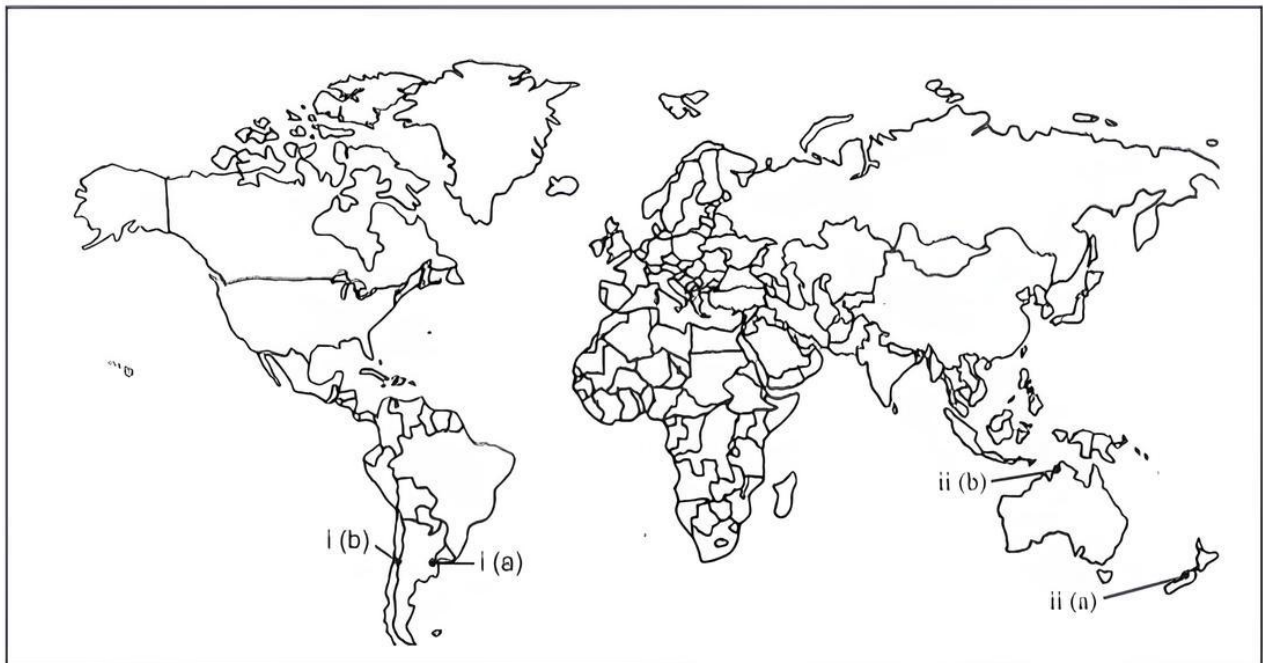
- (i) 2 major airports of Africa (ii) 5 major airports of Europe (iii) 3 major airports of North America



- Ans. (i) (a) Johannesburg (b) Nairobi
 (ii) (a) Moscow (b) London (c) Paris (d) Rome (e) Berlin
 (iii) (a) Chicago (b) Mexico City (c) New Orleans

Q 5. On the political map of the world, identify the following:

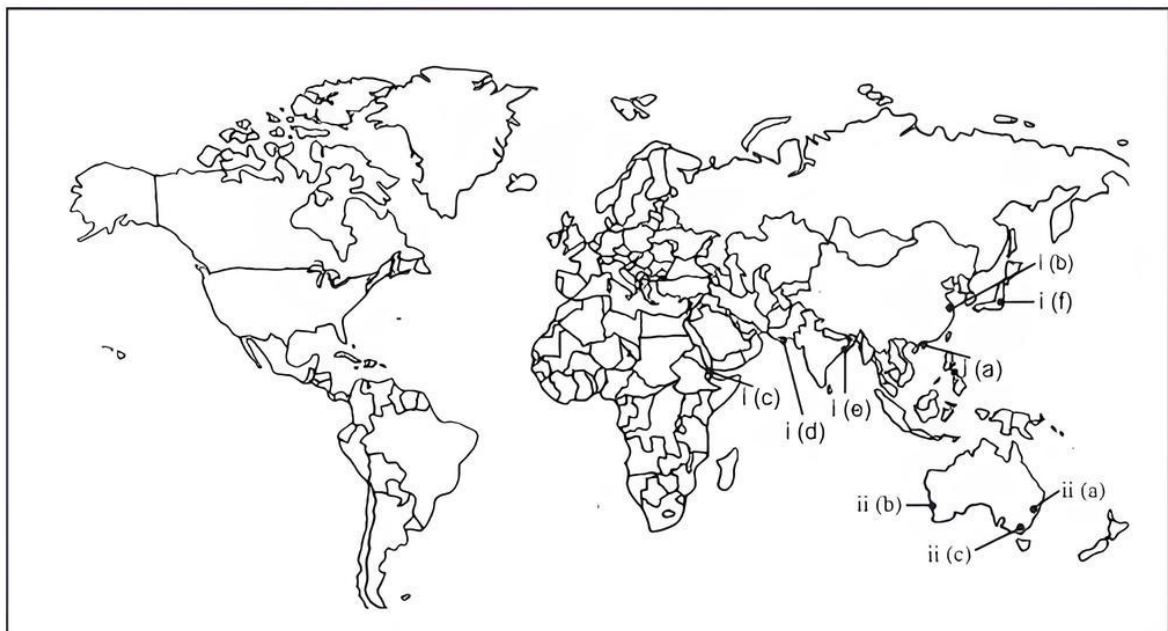
- (i) 2 airports of South America
- (ii) 2 airports of Australia



- Ans.** (i) (a) Buenos Aires (b) Santiago
 (ii) (a) Wellington (b) Darwin

Q 6. On the political map of the world, identify the following:

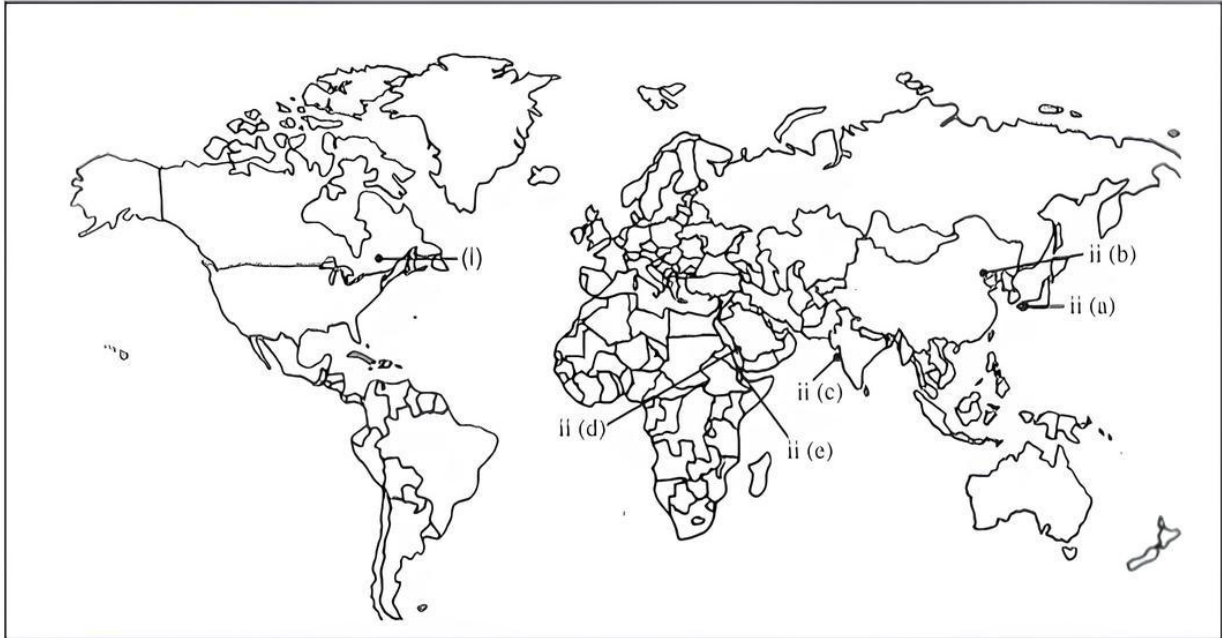
- (i) 6 sea ports of Asia
- (ii) 3 sea ports of Australia



- Ans.** (i) (a) Hong Kong (b) Shanghai (c) Aden (d) Karachi (e) Kolkata (f) Yokohama
 (ii) (a) Sydney (b) Perth (c) Melbourne

Q 7. On the political map of the world, identify the following:

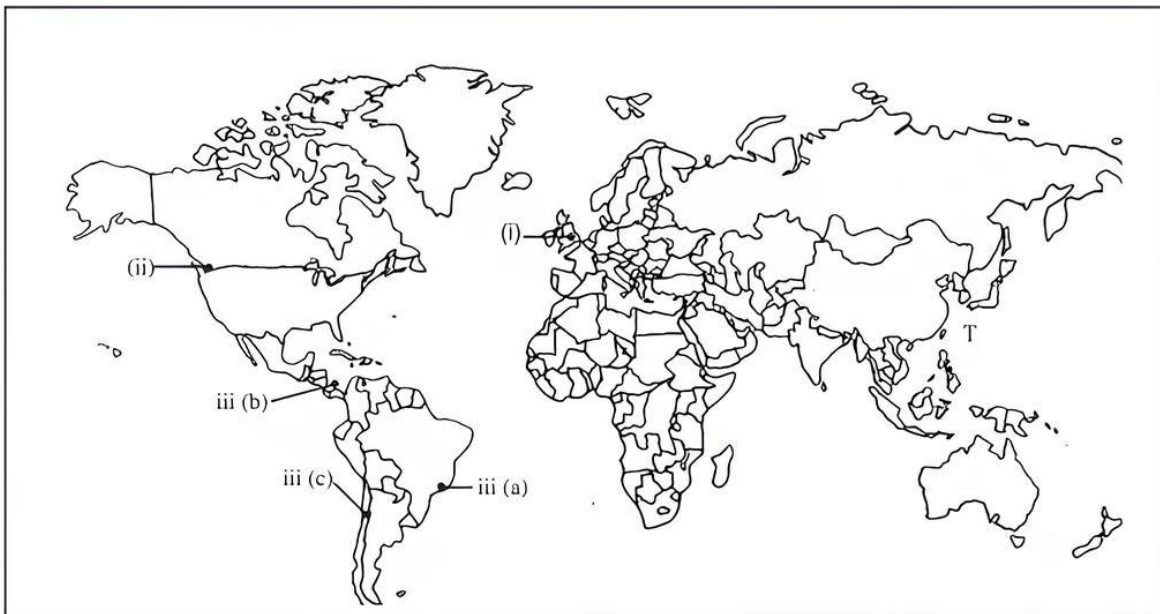
- (i) An inland waterway
- (ii) 5 major airports of Asia



Ans. (i) St. Lawrence Seaway
 (ii) (a) Tokyo (b) Beijing (c) Mumbai (d) Jeddah (e) Aden

Q 8. On the political map of the world, identify the following locations:

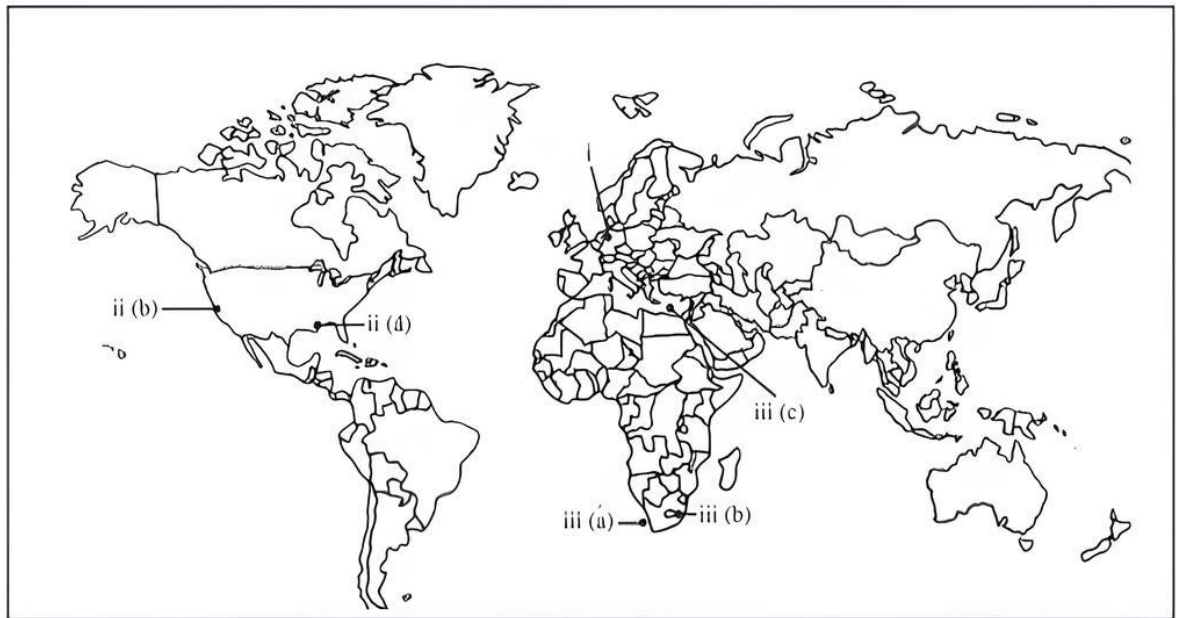
- (i) A major sea port of Europe
- (ii) A major sea port of North America
- (iii) 3 major sea ports of South America



Ans. (i) London
 (ii) Vancouver
 (iii) (a) Rio de Janeiro (b) Colon (c) Valparaiso

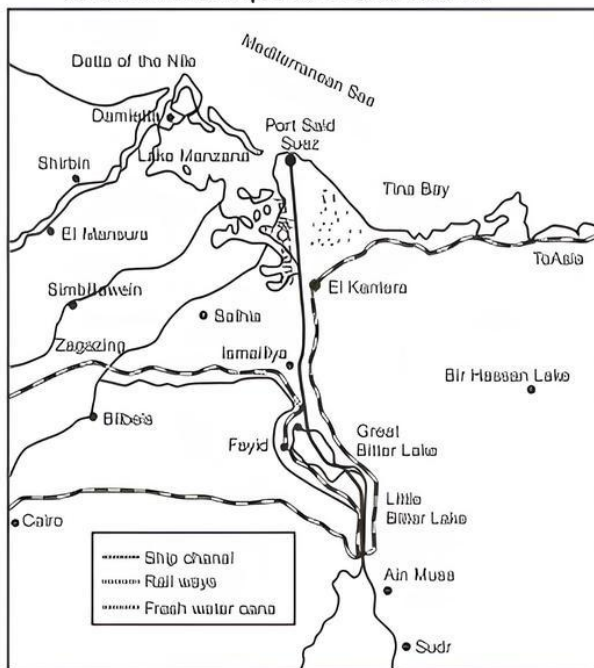
Q 9. On the political map of the world, identify the following locations:

- (i) 1 major sea port of Europe
- (ii) 2 major sea ports of North America
- (iii) 3 major sea ports of Africa



- Ans. (i) Hamburg
 (ii) (a) New Orleans (b) San Francisco
 (iii) (a) Cape Town (b) Durban

Q 10. Study the following map of the Suez Canal carefully and answer the questions that follow :

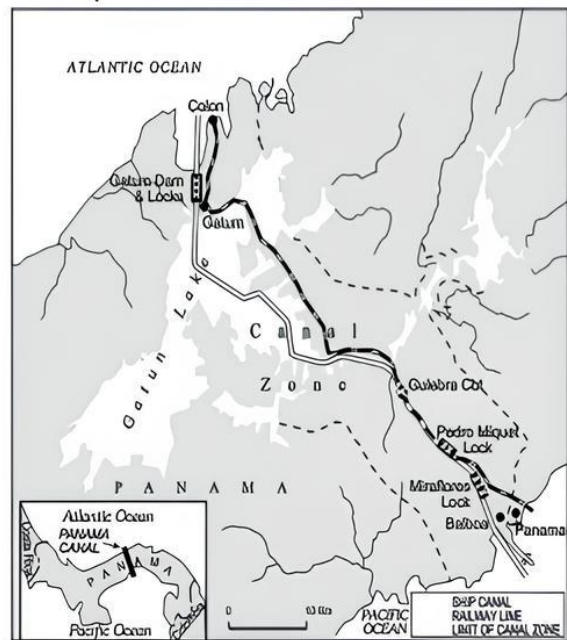


- (i) Name the country through which this canal passes.
 (ii) Name the seas connected by this canal.
 (iii) Why is this canal considered a gateway of Europe to the Indian Ocean? (CBSE 2018)

- Ans. (i) Egypt
 (ii) Mediterranean Sea and Red Sea
 (iii) This Canal is said to be the Gateway of Europe to the Indian Ocean:
 (a) It is considered a gateway of Europe to the Indian Ocean as it reduces the distance between Europe and Asia.

- (c) Suez
 (b) It gives direct sea route distance between Liverpool and Colombo compared to Cape of Good Hope Route.
 (c) It saves time and fuel.

Q 11. Study the map given below carefully and answer the questions that follow:



- (i) Identify and name the canal shown in the map.
 (ii) Write any four characteristics of this canal.

- Ans. (i) This map shows Panama canal
 (ii) Four characteristics of this canal are:
 (a) This connects the Atlantic Ocean with the Pacific Ocean.
 (b) It is constructed by US Government across Panama Isthmus between Panama city and Colon.

- (c) It is 72 km long and involves a very deep cutting for a length of 12 km.
- (d) It reduces the time for ships to travel between the Atlantic and Pacific Ocean.

Q 12. Study the map given below carefully and answer the following questions:



- (i) Name the inland waterway shown in the map.
- (ii) This waterway connects industrial areas of which countries of Europe?
- (iii) State any two characteristics of this waterway.
- Ans. (i) The Rhine Inland waterway is shown in the map.
- (ii) It connects the industrial areas of Switzerland, Germany, France, Belgium and the Netherlands.
- (iii) Characteristics of this waterway are as follows:
- Rhine river flows through a rich coalfield making whole basin prosperous manufacturing area.
 - This waterway is the world's most heavily used, e.g. more than 20,000 ocean-going vessels and 2,00,000 inland vessels exchange their cargoes each year.



Chapter Test

Multiple Choice Questions

- Q 1. The principal modes of world transportation are, water, air and pipelines.
- land
 - animals
 - vehicles
 - None of these
- Q 2. Which railway line runs through Katanga-Zambia Copper Belt?
- Tanzania Railways
 - Benguela Railways
 - Peruvian Railways
 - Trans-Siberian Railways

Assertion and Reason Type Question

- Q 3. In the question given below, there are two statements marked as Assertion (A) and Reason (R). Read the statement and choose the correct option:

Assertion (A): Railways are most suited for large volume bulky materials over longer distances.

Reason (R): As compared to railways, road transport is economical for short distances.

- Both (A) and (R) are true and (R) is the correct explanation of (A).
- Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (A) is true, but (R) is false.
- (A) is false, but (R) is true.

Passage Based Question

- Q 4. Read the passage given below and answer the questions that follow:

Air transport is the fastest means of transportation, but it is very costly. Being fast, it is preferred by passengers for long-distance travel. Valuable cargo can be moved rapidly on a worldwide scale. It is often the only means to reach inaccessible areas. Air transport has brought about a connectivity revolution in the world. The frictions created by mountainous snow fields or inhospitable desert terrains have been overcome. The accessibility has increased. The airplane brings varied articles to the Eskimos in Northern Canada unhindered by the frozen ground. In the Himalayan region, the routes are often obstructed due to landslides, avalanches or heavy snow fall. At such times, air travel is the only alternative to reach a place. The manufacturing of aircrafts and their operations require elaborate infrastructure like hangars, landing, fuelling, and maintenance facilities for the aircrafts. The construction of airports is also very expensive and has developed more in

highly industrialised countries where there is a large volume of traffic. At present no place in the world is more than 35 hours away. This startling fact has been made possible due to people who build and fly airplanes. Travel by air can now be measured by hours and minutes instead of years and months. Frequent air services are available to many parts of the world. Although, U.K. pioneered the use of commercial jet transport, U.S.A. developed largely post-war international civil aviation. Today, more than 250 commercial airlines offer regular services to different parts of the world. Recent developments can change the future course of air transport. Supersonic aircraft, cover the distance between London and New York within three and a half hour.

- (i) Explain any two advantages of Air Transport.
- (ii) Explain any two limitations of Air Transport.
- (iii) What distance cover the supersonic aircraft?

Very Short Answer Type Questions

- Q 5. Name any one major seaport of Africa.
- Q 6. Mention one reason for the least development in rail facilities in West Asia.
- Q 7. On the basis of configuration and purpose, compare the two satellite systems in India.

- Q 8. Why were all forms of transport referred to as lines of communication?

Short Answer Type Questions

- Q 9. Which are the major regions of the world having a dense network of airways?
- Q 10. What are the modes by which cyberspace will expand the contemporary economic and social space of humans?
- Q 11. What are the different roles played by pack animals in transportation in different parts of the world?
- Q 12. What are the important characteristics of border roads?

Long Answer Type Questions

- Q 13. Explain the merits and demerits of road transport in the world.
- Q 14. Which continent has the highest road density? Why do traffic congestions occur on road? Explain any three measures to solve the problem of traffic congestion.
- Q 15. 'The Suez and the Panama Canals are two vital man-made navigation canals, which serve as the gateways of commerce for both the Eastern and Western Worlds?' In the light of this statement, explain the economic significance of these two canals.
- Q 16. Analyse the distribution of highways in the world.

