

1. About **85 per cent of passenger and 70 per cent of freight traffic** are carried by roads every year.
2. Road transport is relatively suitable for shorter distance travel.
3. '**Nagpur Plan**' was the first serious attempt to construct roads in India in 1943.
4. **Sher Shah Suri** built the **Shahi (Royal) road** (Grand Trunk/GT Road) from the Indus Valley to the Sonar Valley in Bengal.
5. GT Road is bifurcated into **2 segments:**  
**(a) National Highway (NH)-1 from Delhi to Amritsar,**  
**(b) NH- 2 from Delhi to Kolkata.**
6. The National Highways are only 2 per cent of the total road length but carry 40 per cent of the road traffic.
7. Longest National Highway is **NH – 7 from Varanasi to Kanyakumari.**
8. Rural roads are 80% of total road length.
9. Border Road Organisation has constructed world highest motorable roads in Leh (Ladakh).
10. Road Density is highest in Kerala and it is lowest in Jammu and Kashmir.
11. First Railway was introduced in 1853, from Bombay to Thane covering a distance of 34 km.
12. Indian railway system is divided into 16 Zones.
13. Northern Railway Zone has maximum earning from passenger transport.
14. East Coast Zone has maximum earning from goods.
15. Indian railway carries more passengers than freight. But the freight traffic is growing much faster than passenger traffic.
16. Indian railways carry more of Raw Material (Coal, Cement, Raw material for steel plants and petroleum) than finished goods.
17. Most of the railway lines are Broad gauge.
18. Narrow gauge is generally confined to hilly areas.
19. Konkan Railway connects Roha in Maharashtra to Mangalore in Karnataka.
20. Asia's largest tunnel which is nearly 6.5 km long lies in Konkan Railway.
21. Inland Waterways Authority looks after the development, maintenance and regulation of national waterways in the country.
22. India has a vast coastline of approximate 7,517 km.
23. There are 12 major and 185 minor ports.
24. **95 per cent of India's foreign trade by volume and 70 per cent by value** moves through ocean routes.
25. Sea routes are also used for the **purpose of transportation between the islands** and the rest of the country.
26. First Air transport in India was in 1911 when airmail operation started over a little distance of 10 km between Allahabad and Naini.
27. The Airport Authority of India is responsible for providing safe, efficient air traffic and aeronautical communication services and manages all 126 airports.
28. Air India provides International Air Services for both passengers and cargo traffic.
29. Indian Airlines now known as '**Indian**' is the country's largest state-owned domestic carrier.
30. Its new logo "blue wheel" is inspired by the Sun Temple at Konark (Orissa), symbolising timeless motion, convergence and divergence.
31. Pawan Hans is the helicopter service operating in hilly areas and is widely used by tourists in north-eastern sector. It also provides helicopter services to petroleum sector.
32. Oil India Limited (OIL) is engaged in the exploration, production and transportation of crude oil and natural gas.

33. Asia's first cross country pipeline covering a distance of 1,157 km was constructed by OIL from Naharkatiya oilfield in Assam to Barauni refinery in Bihar.
34. Longest pipeline is a 1256 km long pipeline connecting Salaya (Gujarat) with Mathura (U.P.). It supplies crude oil from Gujarat to Punjab (Jalandhar) via Mathura.
35. Among all the personal communication system internet is the most effective and advanced one.
36. Radio broadcasting started in India in 1923 by the Radio Club of Bombay.
37. First T.V. services were introduced in New Delhi where it began in 1959.

## **Road Transport in India**

### **Five classifications of roads based on purpose of construction and maintenance.**

Q.1 Differentiate between the National Highways and State highways of India by giving three points of each.

**OR**

What are National highways? Give four characteristics of it.

What are State highways? Give four characteristics of it.

What are District Roads? Give four characteristics of it.

What are Rural Roads? Give four characteristics of it.

What are Border Roads? Give four characteristics of it.

Ans.

i. **Nation Highways:**

- a. These roads are constructed and maintained by the **Central Government.**
- b. These roads are meant for inter-state transport and movement of defence men and material in strategic areas.
- c. These also **connect the state capitals, major cities**, important ports, railway junctions, etc.
- d. The National Highways constitute only **2 per cent of the total road length but carry 40 per cent of the road traffic.**
- e. The **National Highways Authority of India (NHAI)** has the responsibility of development, maintenance and operation of National Highways.

ii. **State Highways:**

- a. These are constructed and maintained by **state governments.**
- b. They join the **state capitals with district headquarters** and other important towns.
- c. These roads are connected to the National Highways.
- d. These constitute **4 per cent of total road length** in the country.

iii. **District Roads:**

- a. These roads are the connecting link between District Headquarters and the other important nodes in the district.
- b. They account for **14 per cent of the total road length** of the country.

iv. **Rural Roads:**

- a. These roads provide links in the rural areas.
- b. About **80 per cent of the total road length** in India are categorised as rural roads.
- c. The rural roads' density is very low in hilly, plateau and forested areas because these are influenced by the nature of the terrain.

v. **Other Roads:**

d. **Border Roads:**

- i. These roads are in the northern and north-eastern boundary of the country.

- ii. The Border Road Organisation (BRO) constructs and maintains Border roads, constructs roads in high altitude areas and undertakes snow clearance.
- iii. Border roads are meant for increasing economic development of border areas and for strengthening our defence.
- e. **The international highways:**
  - i. These are meant to promote the harmonious relationship with the neighbouring countries by providing effective links with India.

**Important Super National Highway Projects:**

- i. **Golden Quadrilateral National Highway:**
  - a. It will be 5,846 km long with 4/6 lane.
  - b. It is a high density traffic corridor and will connect India's four big metro cities of Delhi-Mumbai-Chennai-Kolkata.
  - c. It will reduce the time- distance and cost of movement among the mega cities of India.
- ii. **North-South Corridors:**
  - a. It aims at connecting Srinagar in Jammu and Kashmir with Kanyakumari in Tamil Nadu.
  - b. It will be 4,076 km long road.
- iii. **East-West Corridor:**
  - a. It connects Silchar in Assam with the port town of Porbandar in Gujarat.
  - b. It will be 3,640 km long road.

Q.2 Describe the uneven distribution of roads in India. Explain three reasons for the uneven distribution of roads in India?

Ans. Road distribution and density is uneven in India. Facts:

- a) Density of roads is **lowest in Jammu and Kashmir and highest in Kerala.**
- b) The density of road is high in most of the northern states and major southern states.
- c) It is low in the Himalayan region, north-eastern region, Madhya Pradesh and Rajasthan.

**The reasons for this variation are:**

**1. Nature of terrain:**

- a. Construction of roads is easy and cheaper in the plain areas.
- b. It is difficult and costly in hilly and plateau areas.
- c. Therefore, the density and the quality of roads is relatively better in plains as compared to roads in hilly areas, rainy and forested regions.

**2. The level of economic development:**

- a. The density and quality of roads is high in urban areas.
- b. It is very low in rural areas.
- c. Therefore, all important towns in north India are important nodes.

## **Rail Transport**

Q.3 Mention any five Recent Developments and Modernization steps taken in Indian Railways.

Ans. Indian Railways have been modernized. Some steps taken are:

- i. Extensive programme to convert the metre and narrow gauges to broad gauge.

- ii. Steam engines have been replaced by diesel and electric engines which **have increased the speed as well as the haulage capacity. It has also improved the environment of the stations.**
- iii. Introduction of Metro rail in the Kolkata and Delhi **has controlled the air pollution in these urban centres.**
- iv. Railway routes have been extended to other areas such as Konkan Railway between Mumbai and Mangalore.
  - v. Rail routes have been electrified.
  - vi. Improvement in passenger services on train and stations.

### **Water Transport**

Q.4 What is the importance of water transport?

Ans. Importance is:

- a. It is the cheapest means of transport.
- b. It is most suitable for carrying heavy and bulky material.
- c. It is a fuel-efficient.
- d. It is eco-friendly mode of transport.

Q.5 Mention some of the problems of Inland Waterways in India.

Ans. Problems:

- a. It faces tough competition from road and railway transport.
- b. Diversion of river water for irrigation purposes made them non navigable in large parts of their courses.
- c. Most of the inland waterways are not used by mechanized vessels.

Q.6 Name three national waterways declared by Inland Waterways Authority. Write two features of each.

Ans. **Three National Waterways are:**

ii. **NW 1: From Allahabad to Haldia**

- a. It is 1,620 km long.
- b. It is **on river Ganga River.**
- c. It is one of the most important waterways in India, which is navigable by mechanical boats up to Patna and by ordinary boats up to Haridwar.

iii. **NW 2: From Sadiya to Dhubri**

- a. It is 891 km long.
- b. It is **on river Brahmaputra.**
- c. It is navigable by steamers up to Dibrugarh which is shared by India and Bangladesh.

iv. **NW 3: From Kottapuram to Kollam**

- a. **It is 205 km long.**
- b. **It is on canals in Kerala.**
- c. It includes 168 km of West Coast canal, Champakara canal and Udyogmandal canal.
- d. **The backwaters of Kerala** provides cheap means of transport and they are also attracting large number of tourists in Kerala.
- e. **The famous Nehru Trophy Boat Race (VALLANKALI) is also held in the backwaters.**

### **Air Transportation**

Q.7 Mention three importance of air transport in India.

Ans. Importance:

- a. Air transport is the fastest means of movement from one place to the other.
- b. It has reduced distances by minimising the travel time.
- c. It is important mode of transport in hilly areas.
- d. In harsh climatic conditions it becomes an important means of transport.

## Communication Networks

**Two categories of the mode of communication:**

**1. Personal Communication System:**

**a. Internet:**

- i. It is widely used in urban areas.
- ii. It enables the user to establish direct contact through e-mail.
- iii. It is increasingly used for e-commerce and carrying out money transactions.
- iv. It provides efficient access to information at a comparatively low cost.

**2. Mass Communication System:**

**a. Radio:**

- i. All India Radio broadcasts a variety of programmes related to information, education and entertainment. Special news bulletins are also broadcast at specific occasions like session of parliament and state legislatures.

**b. Television (T.V.):**

- i. Television broadcasting has emerged as the most effective audio-visual medium for disseminating information and educating masses.
- ii. In 1976, TV was delinked from All India Radio (AIR) and got a separate identity as Doordarshan (DD).
- iii. After **INSAT-IA** (National Television-DD1) became operational and Common National Programmes were started for the whole country and its services were extended to the backward and remote rural areas.

**c. Satellite Communication:**

- i. Satellites are mode of communication in themselves as well as they regulate the use of other means of communication.
- ii. Satellite provides a continuous and larger view of area which has made satellite communication very vital for the country.
- iii. Satellite images can be used for the weather forecast, monitoring of natural calamities, surveillance of border areas, etc.

**On the basis of configuration and purposes, satellite system in India can be grouped into two:**

- a. **Indian National Satellite System (INSAT):** which was established in 1983, is a multipurpose satellite system for telecommunication, meteorological observation and for various other data and programmes.
- b. **Indian Remote Sensing Satellite System (IRS)** became operational with the launching of IRS-IA in March 1988. These satellites collect data for various uses. These are very useful in the management of natural resources.