

# Transport and Communication

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## Exercise

**Q. 1 A. Differentiate between:**

**Railways and roadways**

**Answer :** Railways and roadways

Basis	Roadways	Railways
Services	Provides door to door service. Since the roadways are highly connected to everywhere, we can travel everywhere.	Railways do not provide the door to door services. From the station, we have to move to the specified place by roadways.
Cost	Compared to railways the roadways are very expensive since most roadways transportation is by diesel or petrol both of which are costly.	Railways are one of the cheapest modes of transport. Railways have both diesel engine and electric engine.
Connectivity	Roadways are connected immensely to all the places in our country. Even in the toughest terrain roads are built. For example, Manali-Leh highway is one the highest roadway in the world.	Even though the railways are connected to many parts in the country there is difficulty in connecting the hilly terrains. Therefore roadways should be used to travel to hilly terrain.
Time	For the long journey, the roadways are time-consuming. It is time-consuming because of the road conditions, traffic jams...etc.	It is the fastest mode of transportation compared to roadways. Some special trains are there which makes the journey even faster such as super fast trains, bullet trains...etc.

**Q. 1 B. Differentiate between:**

**Transportation and communication**

**Answer :** Transport and Communication

<b>Basis</b>	<b>Transportation</b>	<b>Communication</b>
Medium	Transportation is a medium to carry people and goods from one place to another place. In transportation movement of people and goods takes place.	Communication is a medium for transferring the message from one place to another. The communication can be of any type like the message, telephone, direct communication...etc.
Speed	Transportation takes time to transport the people and goods from one place to another.	Communication in the current world takes less than a minute to communicate to the person miles away from us.
Mode	In the earlier period the animals were used for the transportation purpose, but after the new inventions vehicles are used as a mode of transportation.	For communication, the internet is widely used in the current world. The messages and data are shared quickly throughout the world. Mass media communication helps to deliver the message to the whole world within seconds.
Kinds	Transportation can be through waterways, airways, roadways or through pipelines.	Communication also has different kinds of ways used to communicate. There are two type of communication that is personal and mass media communication. Personal communication includes telephone, WhatsApp, telegram, post etc, while Mass communication include radio, TV, Facebook, ...etc
Development	There is a huge development from the bullock cart to the spaceship. The inventions of new technology have saved the time immensely.	In communication also the development with technology is being massive. These developments have reduced the communication time from days and months to minutes and seconds.

**Q. 1 C. Differentiate between:**

**Conventional and modern means of communication.**

**Answer :** Conventional and modern means of communication

Basis	Conventional	Modern
Meaning	Conventional means of communication is the traditional means of communication in which the reach of people is very limited due to the lack of technological advancement.	Modern means of communication is the means in which the communication technology used is very fast. The satellite has helped to develop the technology even better. The modern technology has wide reach throughout the world because of the internet.
Reach of people	Conventional means had a very less reach to the outer world and people.	Modern means of communication has a very higher reach of people compared to the conventional mode of communication. This is due to technological advancement.
Mode of communication	In the earlier days, letters and word-of-mouth were the important modes. Newspaper developed with the invention of the printing press.	Radio, telegram, and newspaper were the first of modern communication modes. All these modes are relevant even today. TV, Facebook, Whatsapp, newspaper...etc are the most used modern means of communication.
Time	These means of communication is time-consuming. Since the reach of people are also less the completion of the communication process takes time.	Modern means of communication are effective in time parameters. The message that is to be delivered can be delivered quickly within the stipulated time.
Connection	Since the conventional mode of communication is not connected to the outer world there lacks unity.	Satellite communication is connected to all over the world which makes modern means of communication well connected throughout the world. This makes the states and countries connected to each and united.

## Q. 2 A. Answer in detail :

### ‘Newspapers are used for communication’. Explain the statement

**Answer :** Newspapers are used for communicating to a large volume of people at a time. Newspaper developed with the invention of the printing press. Even though the newspaper is the traditional means of communication, even now it has great relevance everywhere in the world.

Newspaper addresses the general audience, focused on the specific area and subject. The local newspaper is the key sources that can be relied upon for the information of both the local area and the global arena. Before the advent of the internet, it had a major importance in society. It is the news agencies which can communicate the news to a large volume of people. Since it has the influence to a large number of people, big corporate companies try to promote advertisement through the newspaper. Classified

advertisement and important public notices are important materials of the newspaper. Newspapers are still a very effective means of communication. Many news agencies have started their own News Apps that has widened its reach.

**Q. 2 B. Answer in detail :**

**Explain how T.V. is a cheap means of communication.**

**Answer :** Unlike the newspaper and any other mass media communication TV has a wide range and influence on the public. It is one of the modern means of communication which has wider accessibility.

TV is one of the essential commodities that every household owns. Any message communicated through TV will reach to the mass audience within a short span of time. Big corporate companies promote their advertisement on TV. Advertisement through the TV is cost-effective because only one advertisement can be played multiple times which will influence the audience. Moreover, with the advent of digitalization, many companies are providing cost fewer connections which have increased the accessibility of TV to the general public.

**Q. 2 C. Answer in detail :**

**What types of communications can be done through mobiles?**

**Answer :** There are different types of communication done through mobile phones. Earlier it was confined to personal communication. After the era of internet and android mobile phone revolution, communication through the mobile can be made to a huge volume of people at the same time.

**The basic personal communication that can be made through the mobile are:**

- **Calling:** Calling is the most important function of mobile communicating device. It can be done even if the person miles away. We can contact within seconds and effective communication can be done.
- **Messages:** Message function is used to text the message that we want to convey to the person through the mobile. When we send the text message the message will be delivered within seconds.

The communication has gone through massive changes. Android mobile phones have taken the communication from personal communication to mass media communication. The communication through Whatsapp, Facebook, and many such social media can be used for both personal and mass media communication.

**Q. 3 A. Name them on the basis of the given information:**

**Five cities with airways services in Maharashtra**

**Answer :**

- **Chhatrapati Shivaji International airport**

Chhatrapati Shivaji International airport is the second busiest airport in India according to the arrival of the passengers. It is the primary airport of Maharashtra situated in Mumbai. It was formerly known as Sahar International airport.

- **Pune Airport**

Pune is the second most civil airport in Maharashtra. The airport is functioned by the Airport Authority of India and Indian Air Force. This airport handles both domestic and international flights

- **Aurangabad Airport**

Aurangabad Airport is the civil airport operated by Airport Authority of India. It is located in Aurangabad, Maharashtra.

- **Dr. Babasaheb Ambedkar International Airport**

It is one of the most important international airports in Maharashtra. The airport is located in the city Nagpur, Maharashtra.

- **Nanded Airport**

Nanded is the city situated in Maharashtra. Nanded airport is also known as Shri Guru Gobind Singh Ji Airport, located in Nanded, Maharashtra. The airport is served as the domestic airport in the city and the airport is owned by the Maharashtra Industrial Development Corporation and operated by Nanded airport private limited.

**Q. 3 B. Name them on the basis of the given information:**

**Services available in post offices**

**Answer :** Mail services provided by post offices

- Letters and inland: It is the basic function of the post office. It accepts letters and inland and helps in effective communication. It has lost its relevance due to the development of modern means of faster communication like telephones and mobiles.

- **Telegraph:** It is the long-distance messaging through texts or symbols. In the 19<sup>th</sup> century, electric telegraphy was introduced. It is rarely used service in the post office. In India, it was repealed from 2013.
- **Registered post:** It will be delivered safely to the where the post is to be sent. In this post, the sender affixes stamp and deliver at the post office.
- **Parcel service:** The postal department provide the Parcel service. Parcel can be sent to anywhere in the country with minimal cost. This is most economical compared any other private parcel services.
- **Speed post:** The post sent through is charged extra than the normal post. This helps to reach out the destination as fast as possible.

Financial services by the post office

- Savings account

The post office provides savings account facility. The savings account in the post office helps the ordinary people to save their money for the future uses.

- ATM service

In India, Post office department has started providing the ATM services recently which can be used as a universal ATM. Money can be withdrawn from banks ATM machine.

- Money order

This was mostly used mode for transferring money before the development of commercial banks transferring services. Even now it has significance in many of the rural areas.

- Payments bank

In India, from 2017, postal services have started the payment banks in which the account holders in post office account can pay universally everywhere as the commercial bank payment system functions.

**Q. 3 C. Name them on the basis of the given information:**

**National Highways near your area**

**Answer :** • National Highway 44 (NH 44) is the longest highway in India running from the north-south of India. It connects from Srinagar in Jammu and Kashmir to Kanyakumari in Tamil Nadu. It was laid and maintained by the Central Public Works department.

- NH 8 is one the most important highway that connects Delhi to Mumbai via Jaipur, Baroda, and Ahmedabad which covers the distance of 1428 km.
- NH 5 connects the highway form the city Kolkata to Chennai. This is the highway included in the golden quadrilateral. This highway covers the distance of 1533 km.
- NH 4 connects from Thane to Chennai via Pune and Belgaum. It covers the distance of 1235km.

**Q. 3 D. Name them on the basis of the given information:**

**Ports along the coast of Maharashtra**

**Answer :** Maharashtra is the busiest state with many ports along the coast of the state. Maharashtra has two major ports and they are:

- **Mumbai port:** It is a major port in Mumbai, Maharashtra, handling 10.44% of the total seaborne cargo dealt with major ports in India.
- **Jawaharlal Nehru Port (JNP):** It is the important port in the Mumbai harbor. It was established in the 1990's and has emerged as a premier container handling port. It accounts for almost 55% of the container traffic movement among the ports in India.

There are some non-major ports that are under Maharashtra Maritime Board (MMB) handling cargo include ports at Dahanu, Tarapur, Trombay, Ratnagiri, Jaigad, Redi...etc.

**Q. 4. Identify the relation and match the columns making a chain**

Group A'	Group 'B'	Group 'C'
Postal Services	Roadways	Speed post
Shivneri	World network of connected computers	Exchange of information
Internet	Conventional means of communication	Comfortable journey
RoRO transport	Railways	Energy time and labor saving

**Answer :**

	<b>Group A</b>	<b>Group B</b>	<b>Group C</b>
a.	Postal services	Conventional means of communication	Speed post
b.	Shivneri	Roadways	Comfortable journey
c.	Internet	World network of connected computers with	Exchange of information
d.	RoRo Transport	Railways	Energy time and labor saving

### **Explanation**

**a.** Postal services are said to be conventional means of communication because, before the advent of the internet and mobile phones, the postal service was the only significant mode for communication. One service provided by the postal services is speed post.

**b.** Shivneri is the birthplace of Chhatrapati Shivaji. The Shivneri fort is a tourist hotspot. The only means to reach the Shivneri fort is roadways. The roadway by the bus makes the comfortable journey to the fort.

**c.** The Internet is the world network connected with computers and mobiles through the satellite. The internet helps to exchange information throughout the world.

**d.** RoRo transport is the Roll-on/ Roll off transport which carries loads of trucks directly by the train. These services are done by railways and waterways, thus reducing the human effort in taking the truck from one place to another. It saves time carrying many trucks at the same time.

### **Activity**

**Q. 1. Collect information regarding the satellites sent by India for educational and communicational purposes. Make use of ICT for that.**

**Answer :** India has been successfully launching satellites of many types since 1975. The organization responsible for India's space program is the Indian Space Research Organisation (ISRO). Satellites are an artificial object which has been intentionally placed into orbit. It may be for communicative, educative or for monitoring.

### **COMMUNICATIVE SATELLITES**

**APPLE**



The Ariane Passenger Payload Experiment (APPLE), was an experimental communication satellite launched by the Indian Space Research Organisation on June 19, 1981, by Ariane, a launch vehicle of the European Space Agency (ESA) from Centre Spatial Guyanais near Kourou in French Guiana.

APPLE was India's first experimental geostationary communication satellite. It was used in several communication experiments including relay of TV programmes and radio networking. It went out of service on September 19, 1983.



### **INSAT-1A**

INSAT-1A was an Indian communications satellite which formed part of the Indian National Satellite System. It was launched in 1982 for a period of seven years. Following a series of failures, the satellite was abandoned in September 1983. It was the first operational multipurpose communication satellite.

### **INSAT-1B**

INSAT-1B was an Indian communications satellite which formed part of the Indian National Satellite System. It was launched in 1983 for seven years. At the end of its seven-year design life, it was replaced by the newly launched INSAT-1D. In 1992, it was relocated before being decommissioned in August 1993.

### **INSAT-1C**

INSAT-1C was the third in the first generation INSAT series of satellites built by Ford Aerospace to satisfy the domestic communication requirement of India. The Govt. agencies using its services were All India Radio, Doordarshan, Department of Space and Indian Meteorological Department.

INSAT-1C was launched from Guiana Space Centre in Kourou using Ariane 3 rocket on July 21, 1988. It was planned for a period of seven years, but it achieved only 1 year and 3 months.

## **INSAT-1D**

INSAT-1D was 4th and the concluding multipurpose geostationary satellite of INSAT-1 series. It was launched on June 12, 1990. INSAT-1D was a joint venture of the Department of Space, Department of Telecommunications, Indian Meteorological Department and All India Radio. It was a success and was deactivated on 22 May 2002.

## **GSAT-1**

GSAT-1 was an experimental communications satellite launched aboard the maiden flight of the GSLV rocket. It was launched on 18 April 2001. The spacecraft was unable to complete its mission after a launch failure.

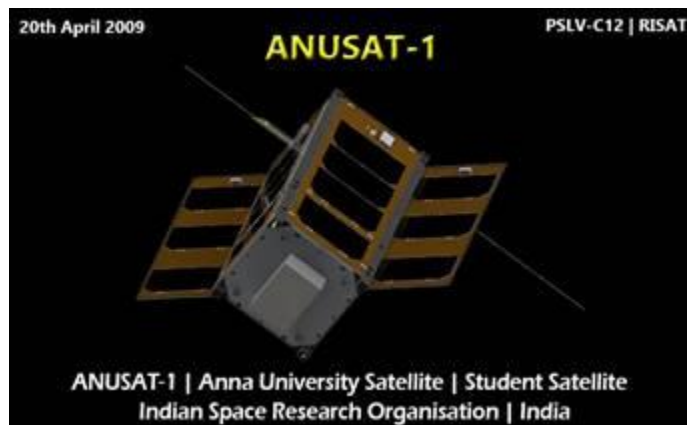
## **HAMSAT**

HAMSAT also known as HAMSAT INDIA, VU2SAT and VO-52 is a microsatellite providing amateur radio satellite communications services for Indian and international amateur radio operators. It was launched by PSLV-C6 on May 5, 2005, from Sriharikota. It was officially decommissioned after 9 Years and 2 Months but is still semi-operational providing unreliable service due to battery failure.

## **ANUSAT**

The Anna University Satellite (ANUSAT) was an Indian student research microsatellite designed, developed and integrated at Aerospace Engineering, Madras Institute of Technology. Students and faculties of Madras Institute of Technology and College of Engineering, Guindy were involved in the design of ANUSAT. It carries an amateur radio and technology demonstration experiments. The satellite's development was sponsored by the Indian Space Research Organisation.

It was successfully launched aboard PSLV-C12 from the Satish Dhawan Space Centre. The launch was carried out on 20 April 2009 for 2 years. It was decommissioned in 2012.



## **SWAYAM**

Swayam is a picosatellite (CubeSat) developed by the undergraduate students of College of Engineering, Pune under the guidance of Indian Space Research Organisation (ISRO) in January 2015. The structural design of the satellite, design of its electronic and control systems as well as the manufacturing of the satellite was carried out by the students. The project was completed over a span of 8 years.

The Satellite was launched by ISRO on 22 June 2016 from Satish Dhawan Space Center, Sriharikota, India.

## **SOUTH ASIA SATELLITE**

The South Asia Satellite, also known as GSAT-9, is geostationary communication and meteorology satellite operated by the Indian Space Research Organisation for the South Asian Association for Regional Cooperation (SAARC) region. The satellite was launched on the 5th of May, 2017.

During the 18th SAARC summit held in Nepal in 2014, Indian Prime Minister Narendra Modi mooted the idea of a satellite serving the needs of SAARC member nations as a part of his neighborhood first policy. Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, and Sri Lanka are the users of the multi-dimensional facilities provided by the satellite. Pakistan declined to participate in the project.

The South Asia Satellite provides crucial information on telemedicine, tele-education, banking, and television broadcasting opportunities. It is also equipped with remote sensing state of the art technology which enables the collection of real-time weather data and helps in observations of the geology of the South Asian nations.

These are some of the most important communicative satellites. Many other satellites apart from this were launched by India for integration in communication.

## **EDUCATIVE SATELLITES**

### **EDUSAT**

GSAT-3, also known as EDUSAT, was a communications satellite which was launched on 20 September 2004 by the Indian Space Research Organisation. EDUSAT is the first Indian satellite built exclusively to serve the educational sector. It is mainly intended to meet the demand for an interactive satellite-based distance education system for the country.

EDUSAT was successfully launched into from the Satish Dhawan Space Centre in Sriharikota. India's first broadband network on EDUSAT for schools - ViCTERS (Versatile ICT Enabled Resource for Students) was inaugurated by Dr. A.P.J Abdul Kalam, on 28 July 2005 in Thiruvananthapuram. It has revolutionized classrooms

through an interactive IP-based technology called 'IT@School Project'. Kerala has since demonstrated how EDUSAT could be used to successfully empower teachers.

It was decommissioned in September 2010 and relocated to a graveyard orbit.