



NATIONAL PROGRESSIVE EDUCATION TRUST'S ENGLISH MEDIUM SCHOOL BELGAUM

FA-2 Revision Class IX 2024-25

Subject: General Knowledge

Indian Space Programme:

- The Indian space programme is aimed at promoting the development and application of space science for the socio-economic benefit of the nation through establishment of operational space services in a self-reliant manner.
- The Indian space programme was launched in 1962, when the Indian National Committee for space research was formed. This was recognised by forming the Indian Space Research Organization in 1969.

ISRO: Indian Space Research Organization:

- ISRO is responsible for the planning, execution and management of space research activities and space application programmes.
- The ISRO has headquarters at Bengaluru. The father of Space Programme is Vikram Sarabhai.
- India's first satellite, Aryabhata was launched on 19th April, 1975 from Baikonur. India has established two major space systems.

INSAT: Indian National Satellite

- INSAT is system for communication, television broadcasting and meteorological services.
- Established in 1983, INSAT satellite provide transponders in various bands to serve the television and communication need of India.

Application of INSAT Satellites:

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|----------------------------|----------------------------|
| • Telecommunication | • Radio Networking |
| • Television | • Mobile Satellite Service |
| • Educational TV | • Satellite Navigation |
| • Satellite News Gathering | |

Indian Remote Sensing Satellite (ISR) System

- The IRS satellites are state of the art satellites, indigenously designed and put into polar orbit for useful remote sensing applications.
- It was commissioned with the launch of IRS-1A, in 1988. IRS is the largest civilian remote sensing constellation in the world.

Sound:

- Sound is a form of energy, which produces the sensation of hearing. Sound is produced by vibrating objects.
- Sound waves are mechanical longitudinal waves and require medium for their propagation. Sound waves cannot propagate through vacuum.
- If a sound wave propagates from one medium to another, then its speed and its wavelength changes but its frequency remains constant.
- Sound waves are of three types:
 - Infrasonic waves (0 to 20Hz)
 - Audible waves (20 Hz to 20000 Hz)
 - Ultrasonic waves (Above 20000 Hz)

SONAR

- SONAR stands for Sound Navigation and Ranging. It is used to measure the depth of a sea, to locate the enemy submarines and shipwrecks.
- The transmitter of sonar produces pulses of ultrasonic sound waves of frequency of about 50000 Hz. The reflected sound waves are received by the receiver.

Human Ear

- We are able to hear with the help of an extremely sensitive organ of our body called the ear. There are three parts of human ear.
- The outer is called pinna. It collects the sound from the surroundings. The middle ear transmits the amplified pressure variations received from the sound wave to the inner ear.
- In the inner ear, the pressure variations are turned into electrical signals by the cochlea. These electrical signals are sent to the brain via the auditory nerve and the brain interprets them as sound.

Unit of Time

- The SI unit of time is second. One second is defined as 1/86400 part of a mean solar day.
- Other Units of Time:
 - 1 microsecond = 10^{-6} seconds
 - 1 picosecond = 10^{-12} seconds