

Q Global positioning system (GPS).

GPS is a U.S navigation system, which is used by U.S. this system can determine the exact location, velocity, weather conditions from anywhere in the world. this system is operated by U.S Airforce (Bradford Parkinson). United States Airforce is best known as the father of the Global positioning system.

GPS consists of three segments: the space segment, the control segment, and the user segment.

① The space segment GPS satellite system consists of a constellation of 24 operational satellites. Present satellites are 32 in orbit and 24 operational and 8 spare. Each of the satellite circles the earth twice a day. Each satellite contains a computer, an atomic clock, and a radio with an understanding of its own orbit and the clock, it continually broadcasts its changing position and time.

GPS is a trilateration system in which three satellites connect and points the location of a person. satellite calculates the distance. It works in geographic position. Longitude and latitude. one can see the location on map (device display). One can easily see its own location point on the map. sending live location through whatsapp can tell the exact location of a person.

While booking a ride through apps satellites detect the location of a person through its distance.

② Control Segment - it consists of a global network which tracks the GPS satellites, monitor transmissions, perform analyses and send commands and data to the constellation. The segment includes a master control station, an alternate master control station, NO. of 11 command and control antennas, and 15 monitoring sites.

③ User Segment - Generally GPS receivers are composed of an antenna, tuned to the frequencies transmitted by the satellites; receiver processors, and a highly stable clock. They may also include a display for providing location and speed information to the user.

GPS Applications

GPS is a satellite based technology, funded by the US Department of Defense over more than four decades. Its purpose is positioning infantry brigades and armoured divisions in war, for guiding aircraft, UAV's and munitions such as missiles and artillery shells to their targets.

Following the success of the United States GPS satellite constellation, other nations developed their own satellite systems. Following are the names of other nation's satellite constellations:

Russia has made GLONASS
European Union namely Galileo -
China - BeiDou (a.k.a. Compass) -
Collectively these systems are called (GNSS) Global
Navigation Satellite Systems.

Q2:- Remote Sensing Techniques.

It is the scanning of the earth by satellite or high flying aircraft in order to obtain information about it. Remote sensing is the process of detecting and monitoring the physical characteristics of an area - it gives information from a distance. NASA observes Earth and other planetary bodies via remote sensors on satellites and aircraft. Moreover it is the acquisition of information about an object or phenomenon without making physical contact with the object - The applications of remote sensing include land-use mapping, weather forecasting, environmental study, natural hazards study and resource exploitation.

Remote Sensing Resolution :-

In Remote Sensing, the image resolution refers to the amount of information available in a satellite imagery.

In remote sensing we refer to three types of resolution :-

- ① spatial,
- ② spectral
- ③ Temporal.

Spatial Resolution :-

It refers to the size of the smallest feature that can be detected by a satellite sensor or displayed in a satellite image.

Spectral Resolution :-

It is the ability of a sensor to discern finer wavelengths, that is, having more and narrower bands.

Temporal Resolution :-

It is the time it takes for a satellite to complete an orbit and revisit the same observation area. This resolution depends on the orbit, the sensor's characteristics, and the swath width. Because geostationary satellites match the rate at which Earth is rotating, the temporal resolution is much finer. Polar ~~resolution~~ orbital satellites have a temporal resolution that can vary from 1 day to 16 days.

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What are vaccines?

Vaccine is a preparation that is used to stimulate the body's immune system against diseases. The act of introducing a vaccine into the body to produce protection from a specific disease. It is a process by which a person becomes protected against a disease. Through Vaccination - a vaccine typically contains an agent that resembles a disease-causing micro-organism, and is often made from weakened or killed forms of the microbe, its toxins or one of its surface proteins.

Types of vaccines

- ① Attenuated (weakened)
- ② Killed (inactivated)
- ③ Toxoid vaccines
- ④ Conjugate vaccines

please comment on question length and writing style as well.