

CSS - 2016

- 1) What do you know about the Remote Sensing Techniques? Explain resolution and write down the names of its various types?

• Remote Sensing Technique :-

- "Remote sensing is the science of acquiring information about Earth's surface without being in contact with it."
- The main principle of remote sensing is sensing, recording, processing, analyzing and applying.

• Resolution and its Types :-

- The quality data of remote sensing depends on image resolution. It refers to the size of small objects which can be resolved on the ground.
- It has the capacity of instruments to distinguish the differences of light intervals and reflectance.

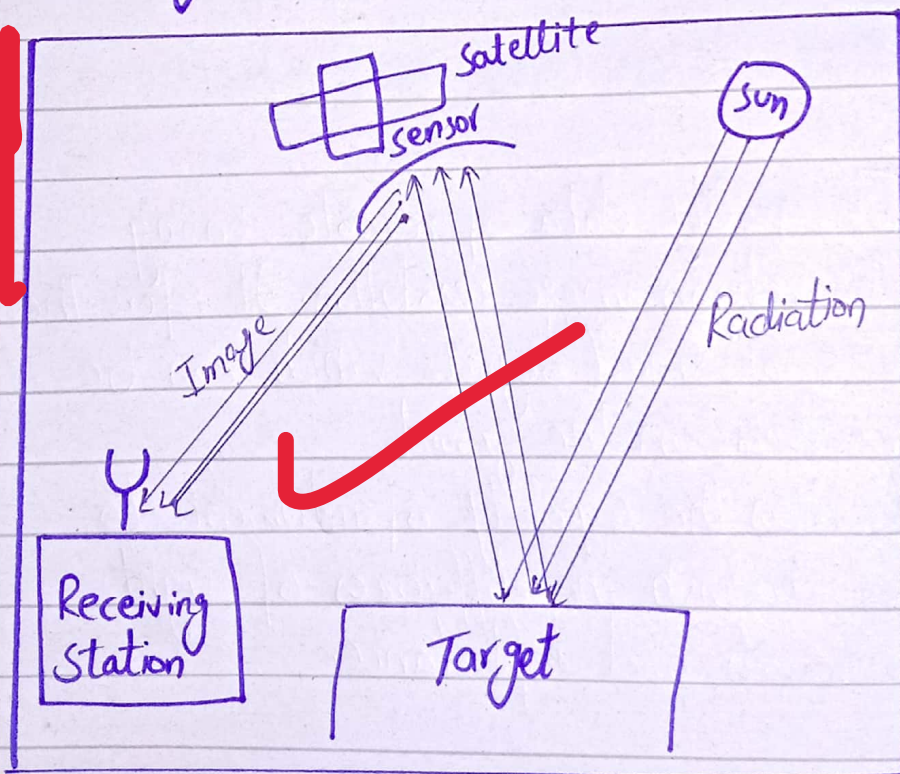
- It has ability of a sensor to define fine wavelength intervals.
- It collects imagery of the same areas of Earth's surface at different periods of time.

• Types of Resolution:-

There are four types of resolution.

- i) Spatial Resolution
- ii) Radiometric Resolution
- iii) Spectral Resolution
- iv) Temporal Resolution

• Diagram:-



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Q2 What is tsunami? How the tsunamis generated and what are their characteristics?

Definition:

- Tsunami is the Japanese word which means "harbour waves" and as used scientifically for a class of abnormal sea waves that can cause catastrophic damage when it hits a coastal area.
- Tsunami is a series of waves that rapidly displacement of water body (ocean). Almost **80%** of tsunamis occurred within the Pacific Ocean "Ring of Fire".
- This is due to the amount of earthquakes and volcanic eruption in the area which occurred the tectonic shifts of earth's plates.

Formation of Tsunamis:-

Tsunamis arise from sudden displacement of the gigantic water masses due to earth-

quakes on the seabed, volcanic eruption above and under, landslides or meteorites impacts. Almost 86% tsunamis result from so-called **Seaquakes**.

• In order for tsunami caused by seaquakes, three things have to be happen.

- i) Earthquake must be measured at least **7.0** in Richter Scale. From this intensity upwards is there enough energy release to displace enough water to create tsunami.
- ii) The seabed must be lifted or lowered by the earthquake. If the seabed displaced sideward, no tsunami will be produced.
- iii) The epicentre of earthquake must be near the coastal line.

Characteristics of Tsunamis:-

- 1) Tsunamis are characterized by shallow water waves. Their range is about ten minutes to 2 hours.
- 2) Earth's most infrequent hazards.
- 3) Wavelength is directly proportional to the depth.

4) The difference between tsunamis and normal waves or waves generated by strong winds are the extreme distance of wavelength which can be between **100km** and **300km**.

5) A further feature of tsunami is relatively small wave height on the open sea, which is between half a meter and one meter. These waves are generally normal in the deep sea. The wave itself only become dangerous when it reaches on land.

6) All the tsunamis do not act the same and it cannot predicted where, when or how destructive it will be.