FAQ's

What the importance of Information Technology is in today's world?

Information technology is the technology used to store, manipulate, distribute or create information. All these can be summed up easily – It's having knowledge, and knowledge comes from having information. Gaining knowledge through information is the role of ''**information technology**'' IT in today's informed world.

IT is a set of tools that can help provide the right people with the right information at the right time. Though IT is not a solution to everything, for IT to work, people must learn how to use it. So you cannot assume that IT will work for you to share information across the organization when people in the organization don't know how to use it.

Communication: Many organizations take electronic mail "email" as a basic form of **communicatio**n among employees, customers, business partners and suppliers. The simplicity of electronic mail "email" makes it easier and faster to exchange information across departments in an organization. The all process saves time and money. However, more emerging forms of communications have surfaced and they also make communication easier. These include video conferencing systems, Voice over internet telephones "VIOP", live text and video chat services like "SKYPE" and smart-phones.

Data Management: There is no need to keep papers about every detail in an organization. Now, organizations have digitized most of their data. This data is stored in a database and employees access and share this information through a decentralized computing system. In a decentralized computing environment, the organization splits computing power and locates it in business areas as well as on the desktop of knowledge workers. So employees and managers can send queries to the database and retrieve data and use it in way required.

This saves time and it also improves on decision making within the organization.

Management Information Systems: With the use of MIS, data can be accessed and used in a given period of time. MIS reports summarize or aggregate information to support decision-making tasks. So, MIS's are systems that have information-processing responsibilities that include information through online analytical processing **(OLAP)** and conveying information to whoever needs it. It is very important for employees and managers to access data anytime for quick **decision making**.

Centralized Information: Banks can operate more than 20 branches in a specific area, but the use of information technology to centralize all the information on all these branches, makes it easy to access information both by the bank employees and the customer.

Credit cards or smart cards: Now banks issue out plastic cards to their customers so that they can perform transaction anytime anywhere. For example , customers can buy anything without carrying cash money, but they will use a smart card like ''VISA ELECTRON'' to pay for products either online or at the shopping center.

What is GIS?

A geographic information system or geographical information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data. The acronym GIS is sometimes used for geographic information science (GIScience) to refer to the academic discipline that studies geographic information systems and is a large domain within the broader academic discipline of geoinformatics. What goes beyond a GIS is a spatial data infrastructure, a concept that has no such restrictive boundaries.

In a general sense, the term describes any information system that integrates stores, edits, analyzes, shares, and

displays geographic information. GIS applications are tools that allow users to create interactive queries (user-created searches), analyze spatial information, edit data in maps, and present the results of all these operations. Geographic information science is the science underlying geographic concepts, applications, and systems.

How has GIS and remote sensing helped the environment?

Conventional radar is mostly associated with aerial traffic control, early warning, and certain large scale meteorological data. Doppler radar is used by local law enforcements' monitoring of speed limits and in enhanced meteorological collection such as wind speed and direction within weather systems in addition to precipitation location and intensity. Other types of active collection includes plasmas in the ionosphere. Interferometric synthetic aperture radar is used to produce precise digital elevation models of large scale terrain (See RADARSAT, TerraSAR-X, Magellan).

Laser and radaraltimeters on satellites have provided a wide range of data. By measuring the bulges of water caused by gravity, they map features on the seafloor to a resolution of a mile or so. By measuring the height and wavelength of ocean waves, the altimeters measure wind speeds and direction, and surface ocean currents and directions.

Ultrasound (acoustic) and radar tide gauges measure sea level, tides and wave direction in coastal and offshore tide gauges.

Light detection and ranging (LIDAR) is well known in examples of weapon ranging, laser illuminated homing of projectiles. LIDAR is used to detect and measure the concentration of various chemicals in the atmosphere, while airborne LIDAR can be used to measure heights of objects and features on the ground more accurately than with radar technology. Vegetation remote sensing is a principal application of LIDAR.

Radiometers and photometers are the most common instrument in use, collecting reflected and emitted radiation in a wide range of frequencies. The most

common are visible and infrared sensors, followed by microwave, gamma ray and rarely, ultraviolet. They may also be used to detect the emission spectra of various chemicals, providing data on chemical concentrations in the atmosphere.

Stereographic pairs of aerial photographs have often been used to make topographic maps by imagery and terrain analysts in trafficability and highway departments for potential routes, in addition to modelling terrestrial habitat features.

Simultaneous multi-spectral platforms such as Landsat have been in use since the 70's. These thematic mappers take images in multiple wavelengths of electro-magnetic radiation (multi-spectral) and are usually found on Earth observation satellites, including (for example) the Landsat program or the IKONOS satellite. Maps of land cover and land use from thematic mapping can be used to prospect for minerals, detect or monitor land usage, detect invasive vegetation, deforestation, and examine the health of indigenous plants and crops, including entire farming regions or forests. Landsat images are used by regulatory agencies such as KYDOW to indicate water quality parameters including Secchi depth, chlorophyll a density and total phosphorus content. Weather satellites are used in meteorology and climatology.

Hyperspectral imaging produces an image where each pixel has full spectral information with imaging narrow spectral bands over a contiguous spectral range. Hyperspectral imagers are used in various applications including mineralogy, biology, defence, and environmental measurements.

Within the scope of the combat against desertification, remote sensing allows to follow-up and monitor risk areas in the long term, to determine desertification factors, to support decision-makers in defining relevant measures of environmental management, and to assess their impacts.