

**Paper name: Remote Sensing, GIS and GPS**

**Paper code: GGY-HC-4036**

### **Topic: Components of GIS**

A **Geographic Information System (GIS)** is a system wherein data related to earth, associated phenomena, and events is mapped and analyzed. It is a powerful system that incorporates spatial data, manages it, analyzes it, answers geographic queries and provides great visualization capability. There are five basic **GIS components** that make it effective which are stated below.

#### **Hardware**

Hardware consists of the technical equipment needed to run a GIS efficiently. It includes computer/s (standalone / networked) with good configuration – good processing capability to run the GIS software, enough hard disk space to store large spatial data, and input and output devices such as scanners, printers, etc.

#### **Software**

GIS software helps to store, analyze, and display geographic information in the form of maps and reports. It provides the a Graphical User Interface (GUI) for easy display and access to tools for input, visualizing, processing, editing, analyzing and querying geographic data. Data is accessed and managed through Data Base Management System (DBMS).

#### **Data**

The most important GIS component is the data – how it is managed and accessed. Data is stored as geographic data (spatial data) and related tabular data (non-spatial data). Data comes in various formats, and GIS integrates such spatial data and non-spatial data by using DBMS. It is the key functionality of GIS that helps in organizing, managing and accessing data.

## Procedures/Methods

To make a GIS system work properly requires not only the necessary investments in hardware, software and data, but also requires knowledge to utilize the GIS technology. The methods are the procedure followed to answer the question need to be resolved. Method in GIS includes how the data will be accessed, stored, managed, processed, analyzed, and finally presented as output for particular application.



Fig.: Components of GIS

## People (Users)

People in GIS are technical persons (GIS managers, database administrators, specialists, analysts, and programmers) who design and maintain the GIS work and those who use it. They are the ones who make GIS work.

People in GIS can be categorized into: viewers – the people who just use GIS for reference; general users – who use GIS for business, services, and making decisions such as planners,

scientists, engineers, etc.; GIS specialists: who are the backbone of GIS and maintain, process and analyze geographic data. They provide technical support to the users.

\*\*\*\*\*