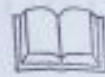**1) Explain GIS and GPS in detail :-**

- **GIS :-**

→ GIS is a full name Geographic Information system.

→ A geographic information systems is a system designed to capture store, manipulate analyze, manage and present all the types of geographical data.

→ The key word to this technology is Geography - this means that some portion of the data is spatial.
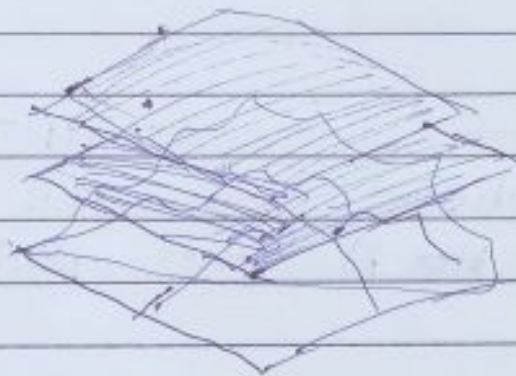
→ In other words, data that is in some way referenced to locations on the earth.

→ Rooted In the Science of geography, GIS integrates many types of data.

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→ It analyes spatial location and organizes layers of information into visualization. using maps and 3D scenes.

→ GIS techno logy applies gerographic science with tools for understanding and collabora tion.
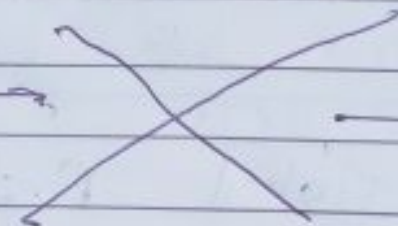

Maps

GPS :—

→ GPS full name is Global Positioning System.

→ GPS, or the Global Positing system, is a global navigation satellite system that provides locations, velocity and time synchronization.

→ GPS is everywhere You can find GPS systems in your car your smartphone and your watch.

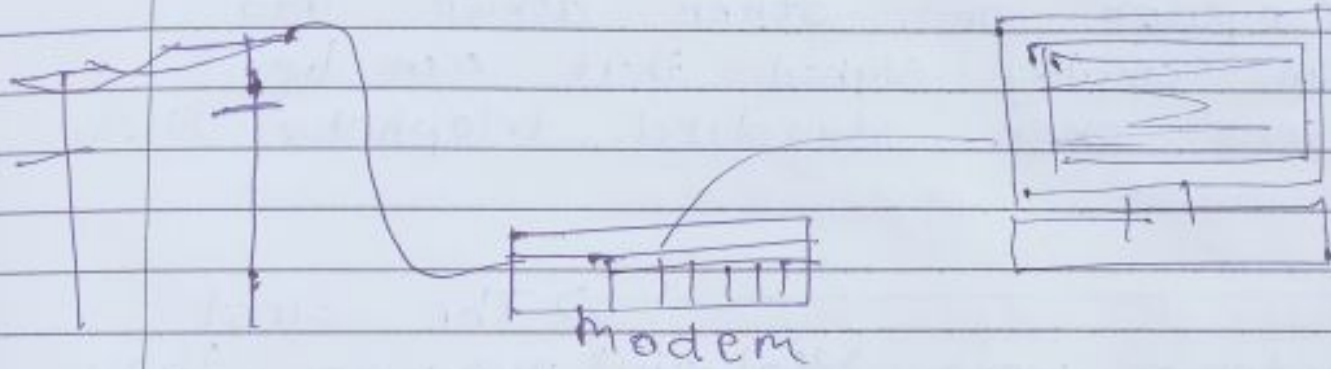→ GPS helps you get where you are going from point to A to point B.

→ GPS is made up of three different components called segments that work together to provides location information.
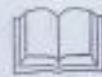
2 | Explain modem:-

→ modem is short for "modulator - Demodulator".

Modem

→ It is hardware component that allows a computer or another device, such as a router or switch, to connect to the Internent.

→ It converts or "Modulates" an anlog signal form a

→ from a
form a telephone or cable wire
to digital data (1s and 0s) that
a computer can recognize.

→ Similarly, it
converts digital data from a
computer or other device into
an analog signal that can be
sent over standard telephone lines.

→ The first
modems were "dial-up", meaning they
had to dial a phone number
to connect to an ISP.

→ These modems
operated over standard analog phone
lines and used the same frequencies
as telephone calls, which limited their
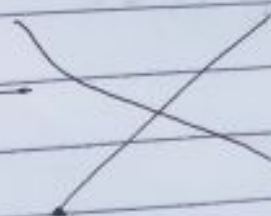maximum data transfer rate.

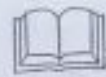→ Dial-up modems also required full use of the local telephone line meaning voice calls would interrupt the Internet connection.

→ modern modems are typically DSL or cable modems, which are considered "broadband" devices.

→ DSL modems operate over standard telephone lines, but use a wider frequency range.

→ This allows for higher data transfer rates than dial-up modems and enables them to not interfere with phone calls.

3 Write a note on Viruses :-

→ A computer Virus, much like a flu virus, is designed to spread from host and has the ability to replicate itself.

→ Similarly in the same way that flu viruses cannot reproduce without a host cell, computer ~~visur~~ viruses cannot reproduce and spread without programming Such as a file or document.

→ In more technical terms, a computer virus is a type of malicious code or program written to alter the way a computer operates and is designed to spread from One computer to another.

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→ A virus operates by inserting or attaching itself to a legitimate program document that supports macro in ordere to execute its code.

→ In the process, a virus has the potential to cause unepected or damaging effects, such as harming the system software by corrupting or destroiny data.

→ Viruses can be spread through, email and text meassage attachments Internet file downlouds, and social media scam links.
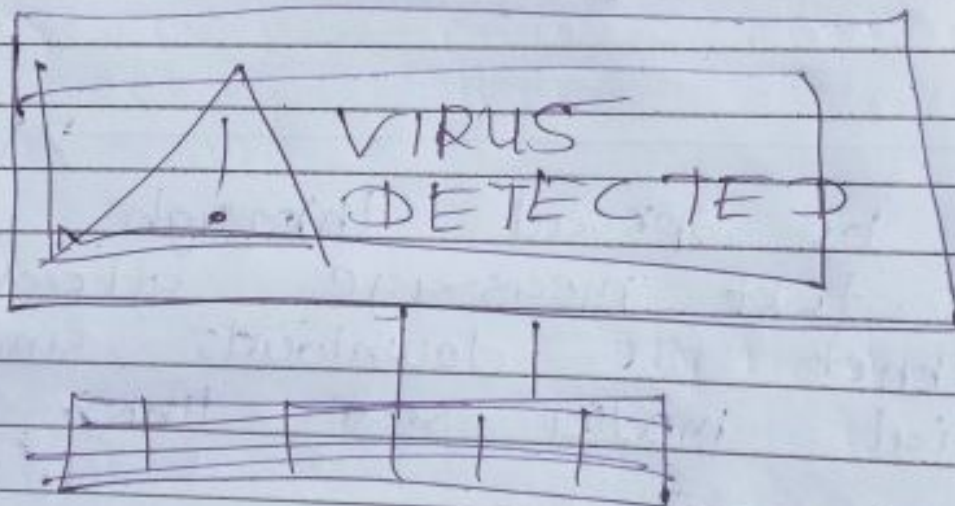
→ To avoid contact with a virus, it's important

to exercise caution when surfing the web, downloading files, and opening links or attachments.

→ To help stay safe, never download text or email attachments that you're not expecting, or files form websites you don't trust.

Q 4 Explin cloud computing :-

=>

- Characteristics :-

(1) Agility :-

→ The cloud works in a distributed computing enviroment.

(2) High availability and reliabitity :-

→ The availability of servers is high and more reliable because the chances of infrastructure failure are minimum.

(3) High Scalability :-

→ cloud offers "on-demand" provisioning of resources on a large scale, without having engineers for peak loads.

(4) multi-Sharing :-
→ with the help of cloud computing, multiple users and applications can work more efficiently with cost reductions by sharing common infrastructure.

(5) Low Cost :-

→ By using cloud computing, the cost will be reduced because to take the service of cloud computing, IT company need not to set its own infrastructure and pay-as-per usage of resources.

(6) Services in the pay-per-use mode :-

→ Application programming Intf Interfaces (APIs) are provided to the users so that they can access services on the cloud by using these APIs and pay the charges as per the usage of services.

• **Cloud Service Models**

(1) Iaas

→ Infrastructure as a Service is full name Iaas.

→ There are following characteristics of Iaas-
• Resource are avaible as a service
• Services are highly scalable
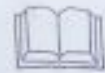• Dynamic and flexible
• GUI and API-based acces

(2) Paas

-> Paas is full name is Platform as a Service.

-> Paas cloud computing platform is created for the programmer to develop, test, run, and manage the applications.

-> Characteris of Paas:-
• Accessible to various users via the same development application.

• Provides an ability to "Auto-Scale".

(3) Saas

-> Saas is full name Software as a Service.

-> Saas is also know as "on-demand Software."

-> Hosted on a remote server.

-> Accessible over the internet.

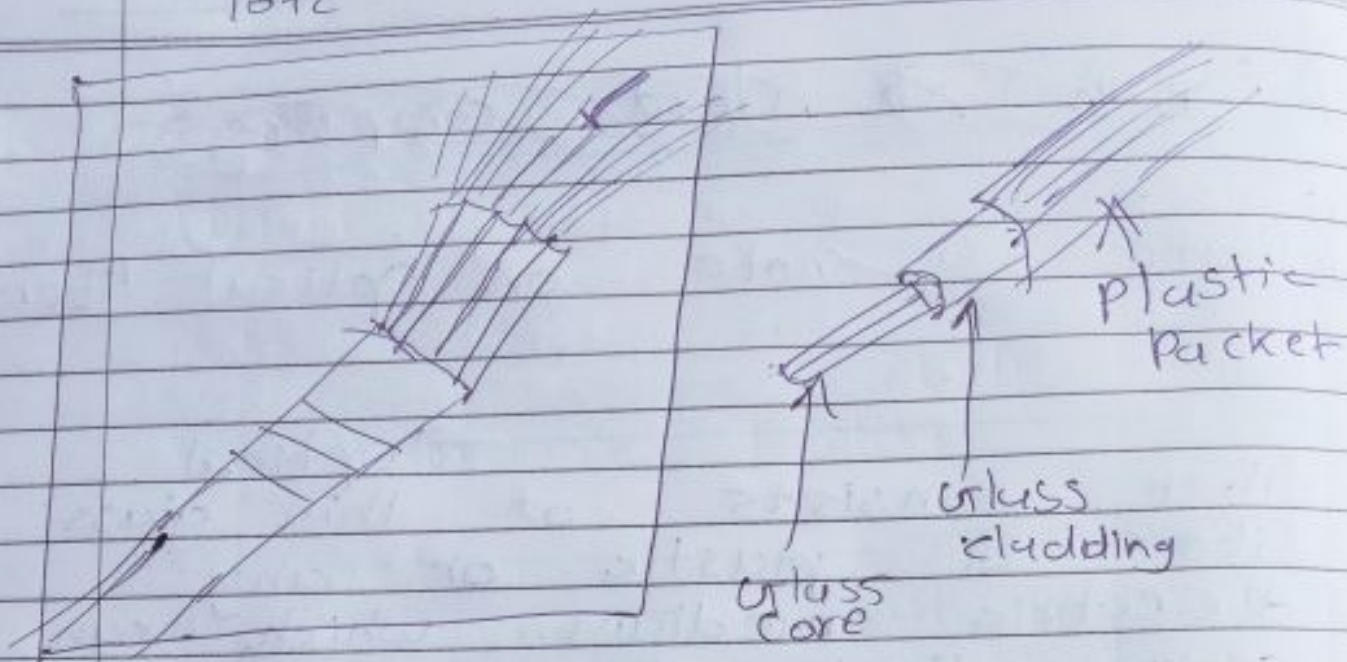-> ~~Many~~ Managed from a central location.

Explain Cloud computing ?

5 write a note on Optical fibers :-

→ Optical fiber consists of thin glass fibers or plastic or any dielectric medium which can carray light signals from one end to the other.

→ Optical fiber Refers to the medium and the technology which is related, or you can say that it is connected with the transmission of information in the form of light impulses and this tranmisson is done along with a glass or plastic wire or fiber.

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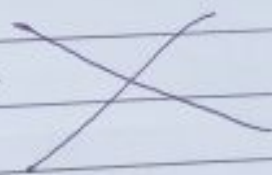1072

plastic
packet

glass
cladding

glass
core

→ The wires of fiber optic cable can carry much more information than any others conventional copper wire.

→ optical fibers make use of light to send information through the optical medium.

→ Fiber optic cabling can provide extremely high bandwidths in the range from 100 mbps to 2 gigabits because light has a much higher frequency than electrity.

→ Fiber optic cable has much lower attenuation and can carray signal to longer distances without using amplifiers and reperters in between.

6 Explain? Bluetooth, Wifi, Lif :-

-> Bluetooth is a wireless technology stand- and used for exchanging data between fixed and mobile devices over short distances using UHF radio waves in the industrial, scientific and medical radio bands.

-> A Bluetooth technology is a high speed low powered wireless technology link that designed to connect phones or other portable equipment together.

-> Bluetooth can connect up to "eight devices" simultaneously and each devices offers a unique 48 bit address from the IEEE 802 standard with the connections being made point to point or multipoint.

-> Bluetooth Network consists of a personal Area Network or a pinconet which contains a minimum of 2 to maximum of 8 bluetooh peer devices.

• Bluetooth Applications:-
 - Cordless Desktop.
 - Ultimate headset.
 - Multimedia Transfer.

6 Exp

Wifi :-

→ Wifi stands for "wireless fidelity"!

→ wifi a universal wireless networking technology that utilizes radio frequecies to transfer data.

→ wifi allows high-speed Internet connections without the use of cables?

→ The term wifi is a contraction of "wireless fidelity" and commonly used to refers to wireless networking technology.

Lifi :-

→ LiFi is wireless communiction technology which utilizes light to transmit data and position between devices.

→ In technical terms, Li-Fi is a light communication system that is capble of trasmitting data at high speeds overs the visible light, ultrviolet, and infrared spectaums.
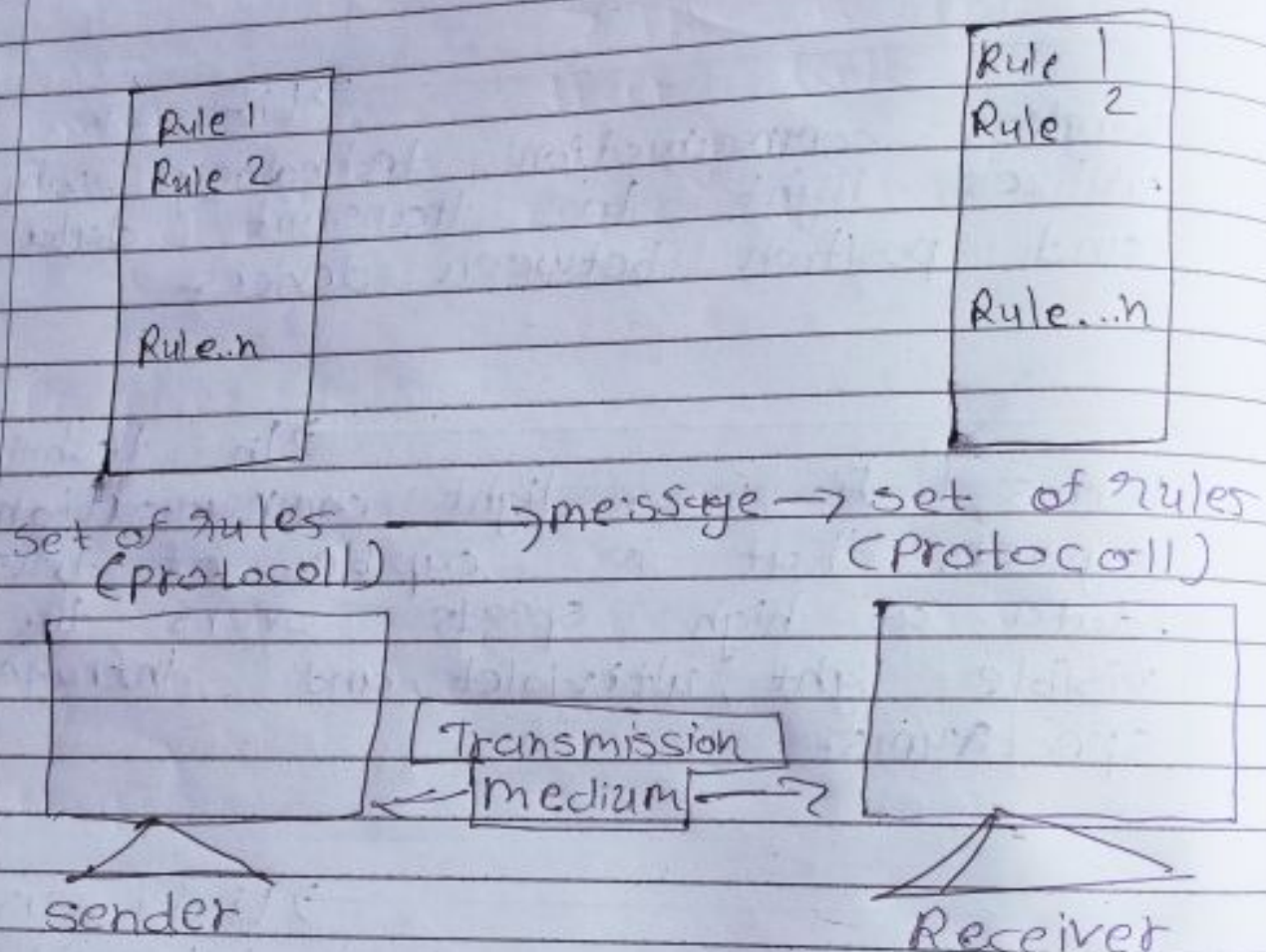
→ Li-Fi uses the modulation of light intensity to transmit data.

→ Litfi can therotically transmit at speeds of up to 100 Gbit/s.

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7 Write a note on E-mail ann also explain its components:-

Rule 1
Rule 2

Rule.n

Rule 1
Rule 2

Rule...n

set of rules ————> message ——> set of rules
(protocoll)   (protocoll)

Transmission
medium

sender   Receiver

————> Emails

work in the same functionality as that of traditional paper mail. Email short for "electronic mail".

○ Componets:-

1. Subjects:-

→ subject is a description of the topic of the message and display in most email systems that list email messages individally.

2. Sender [form]:-

→ This is the sender's Internet email address. It is usually presumed to be the same as the Reply-to-address, unless a different one is provided.

3. Date and time Received:-

→ The date and time the message was recived.

4. Reply-to:-

→ This is the Internet email address that will become the recipient of your reply if you click the Reply button.

5. Recipient (To):

→ First/last name of email recipient as configured by the sender.

6. Recipient email address:-

→ The Internet mail address of the recipient, or where the message was actully sent.

7. Attachments:-

→ Files that are attached to the message.