

General science and

Ability
(PART-II)

(SECTION-A)

Question: 2

(a)

(i) RAM and ROM:-

RAM:

RAM stands for

"Random Access Memory" It is a short term or temporary memory in a computer. which stores data in it until the computer loses its power. when computer turns off, it loses or erases all the data present on it.

RAM is a re-writable memory.

ROM:

ROM stands for

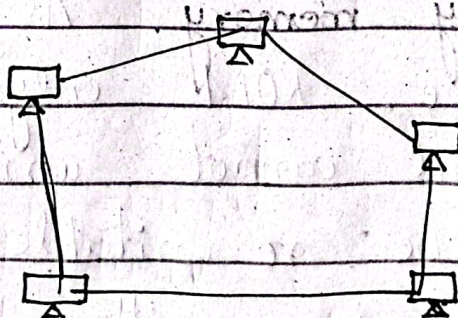
Read only memory. As clear from the name, ROM only reads data and cannot write. ROM cannot be re-writable. Once the data is written on it then it does not get erased.

(ii) Network and Internet :- Network :-

When two or more things, or machines are connected with each other to interact, is known as network. Computers are connected with each other through some wires, or wireless means, are called a network.

Internet :-

When a network is created, then those people talk with each other through some source, such as, voice or language. Same like that when two computers are connected with each other in a network. then, they establish that network through Internet.



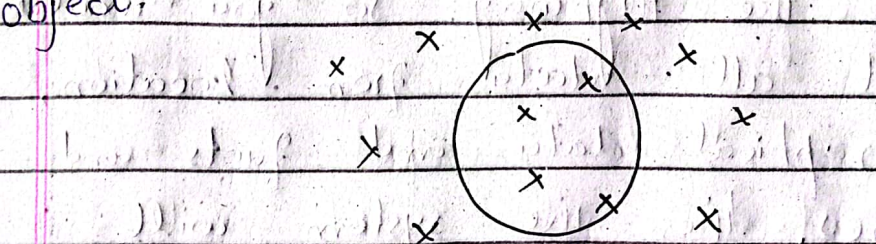
= Diagram of a network.

(iii) GPS and GIS :-

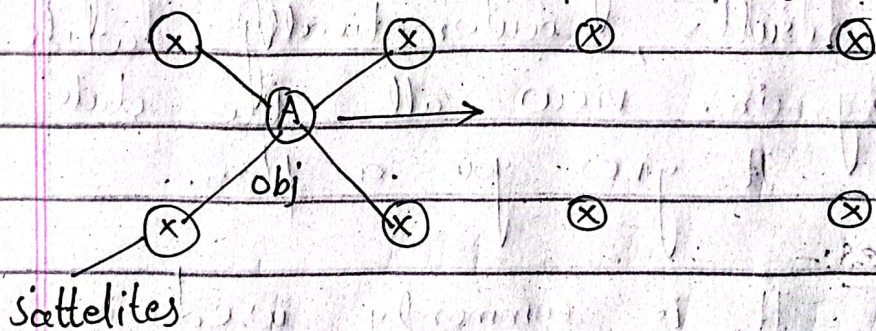
GPS :-

GPS stands for "Global Positioning System". It is a satellite based system which was first introduced for military use. But later, its civilian version was introduced. It is used getting the exact location of an object on land, air and in sea.

There are 4 satellites at every point, which surrounds that object from every angle and give an exact location of the particular object.



{ Illustration of GPS. }



(Diagram : GPS.)

GIS:-

GIS stands for "Geographic Information system". GIS is a computer system capable of capturing, storing, analysing and displaying geographic referred information that is identified according to location.

Components:-

Some components are used such as Hardware, software, Data, a user, and a specific Procedure.

Example:- For Example; If you have to construct a bypass along the Highway so you would collect all data from location, geographical data and facts and figures. When the system will merge all layers and gives you the results, automatically, while keeping in view all the data given. It gives you a plan.

Uses:-

- It is commonly used
- (i) urban planning
 - (ii) Infrastructure
 - (iii) Ground water modeling etc.

(iv) Byte and Nibble :-

Byte :-

Byte is a unit which is used to measure the computer memory. It is eight times bigger than the smallest unit of memory.

$$1 \text{ Byte} = 8 \text{ bits}$$

Nibble :-

Nibble is a memory unit used in computers to measure the capacity of the memory. It is smaller than a Byte.

$$1 \text{ Byte} = 2 \text{ Nibbles}$$

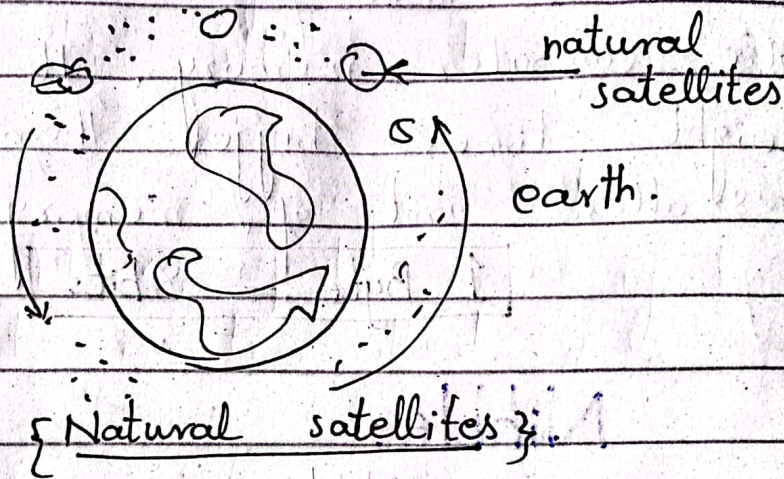
$$1 \text{ nibble} = 4 \text{ bits}$$

(v) Natural satellite and Artificial satellite :-

Natural satellite :-

Natural satellites are the asteroids, meteoroids and other dwarf planets which revolve around

the earth, are known as natural satellites. e.g.:- "Pluto" is a natural satellite.

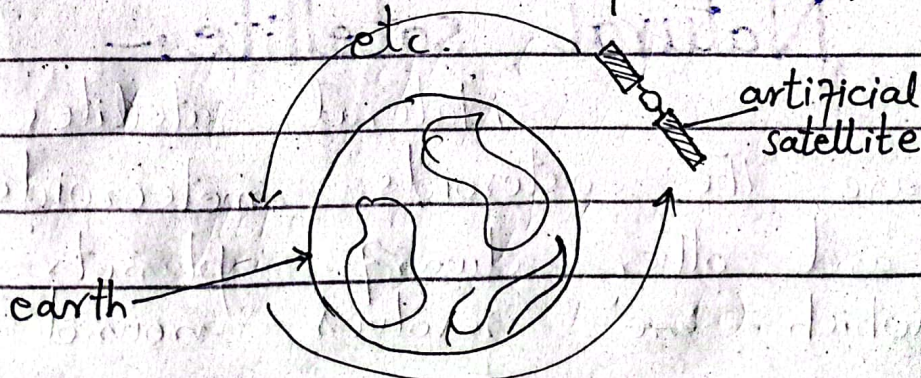


Artificial satellite :-

Artificial satellites are those satellites which are anthropogenic. These satellites are launched into the space with a specific velocity to get into the orbit around the earth.

For Example:-

The very famous examples from artificial satellites are Sputnik V, etc.

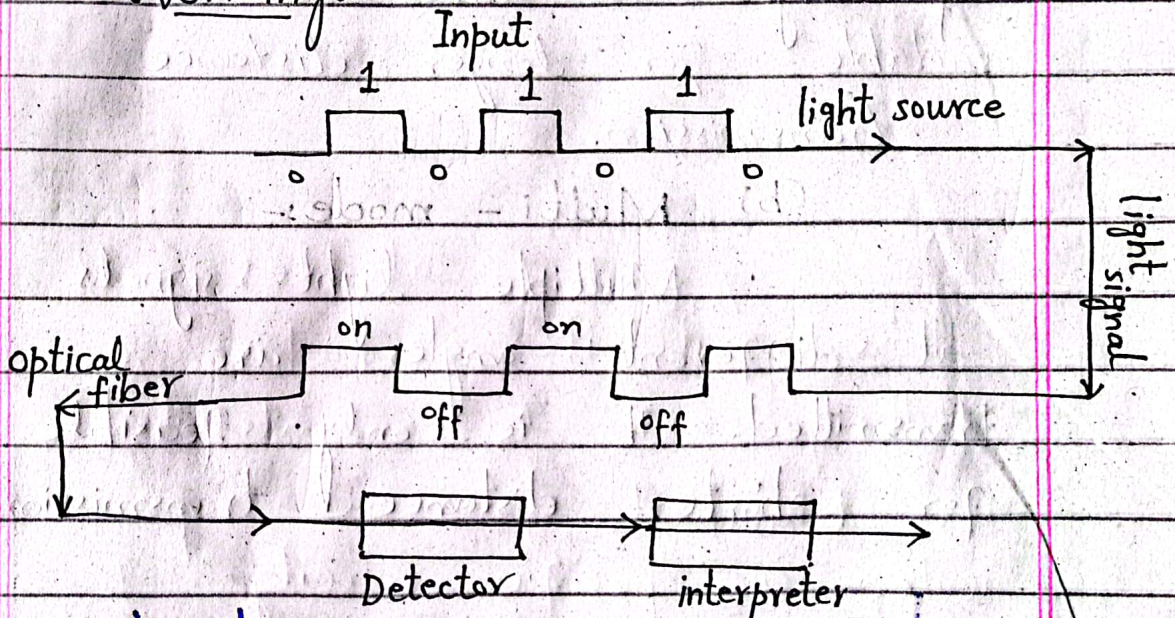


(b)

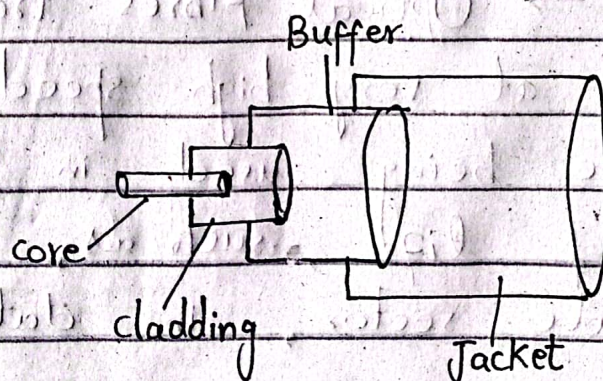
Optical Fibres :-

Definition:- "Optical Fibre is the technology associated with transmission of information as light pulses along a hollow glass tube or a fiber."

Working:-



Structure:-



Types:- There are two types of optical fibers.

(a) Single mode

(b) multi-mode

(a) Single mode:-

In single mode optical fiber, just one signal of light is transmitted. It is suitable for longer distance transmission.

(b) Multi-mode:-

Multiple light signals at different angles are transmitted. It is only feasible for shorter distance transmissions.

Uses:-

→ Optical fibres transmit data at very high speed. So, these are being used in every field of life, such as houses, corporate sector, data bases etc.

→ These optical fibres are used to transmit data all over the globe through under-water transmission lines (sea-channels).

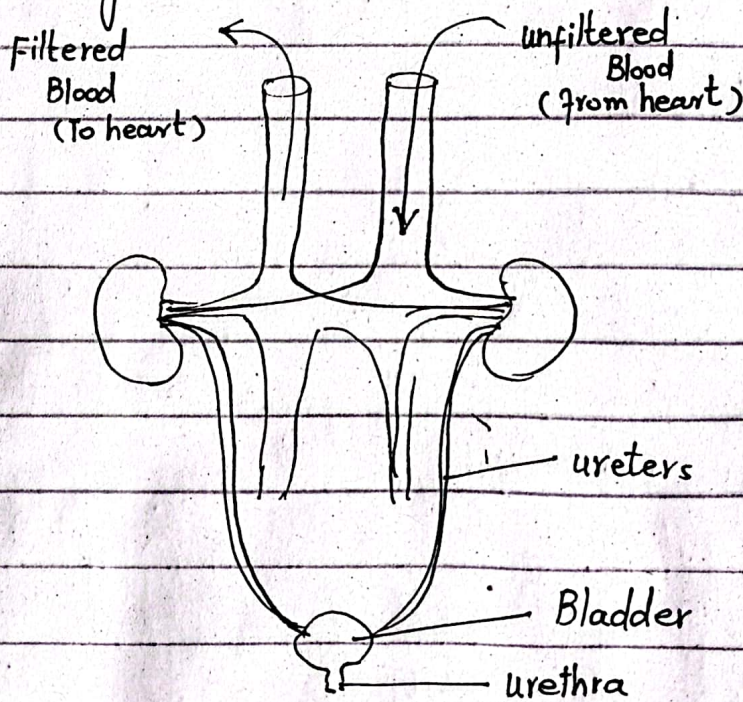
(d)

Working of Kidney:-

Kidney is an essential organ in human body responsible for the filtration of toxic substances from the blood and extracts in the form of urine.

Kidney working shown through

Diagram :-



When the blood enters through left artery towards the kidneys. It is filtered by the kidneys and send back through another right artery towards the heart. (the filtered blood).

And the minerals and wastes, which are extracted from blood are sent down to the bladder

to be released in the form
of urine.

Excretion
The process of removal of waste products from the body is called excretion. The waste products are removed from the body through the excretory system. The excretory system consists of the kidneys, ureters, bladder, and urethra.

