

Q 9) Define Optic Fibre. Its types and its parts.

Answer: **Optic Fibre**

Optic Fibre is strand of glass that helps in transmitting light rays from one point to another point. Moreover, optic fibres are transmitting light rays for telecommunication purpose. Hence, Optic fibres are important in telecommunication.

Types of optic fibre

Following are types of optic fibre.

1) **The Single Mode Step Index Fibre**

The single mode step index fibre has a very short length. It has



about 5 μ meter.

b) **The Multimode Strip Index Fibre**

Multimode strip index fibre has medium length.

In fact, it is powerful than single mode fibre. It has length of 50 to 100 μ m.

c) **The Multimode Degree Step Index Fibre**

Multimode degree step index fibre is the most powerful. It has length of 1000 μ m.

1) The Single mode \rightarrow $5 \times 10^{-6} \text{ m}$

$50 - 100 \times 10^{-6} \text{ m}$ \leftarrow The Multimode (2)

3) The Multimode Degree \rightarrow $1000 \times 10^{-6} \text{ m}$



Parts of Optic Fibre

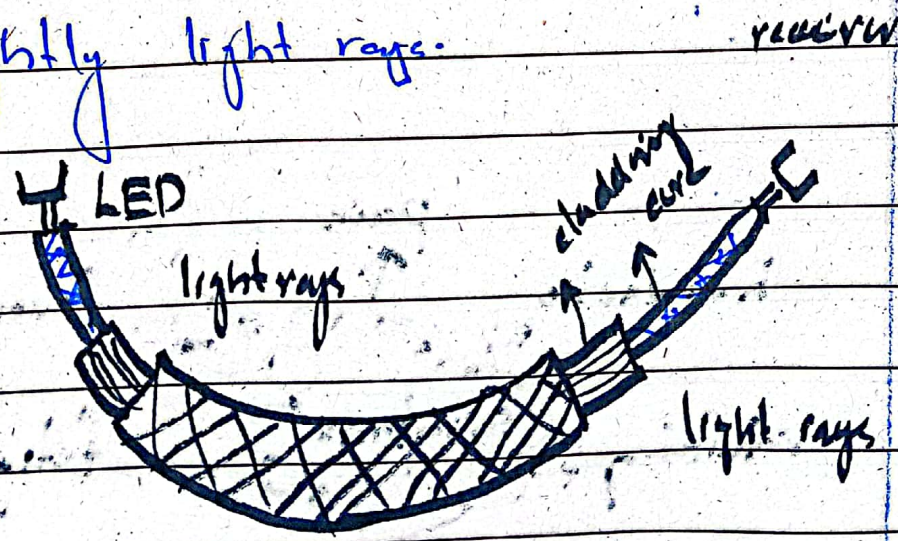
Optic Fibre has two main parts:

a) **Core** - the central part of optic fibre

Core is central part of optic fibre. It has high density and refractive index. More, it highly bends light rays.

b) **Cladding** - the cover over core

Cladding is the second part over core. In fact, it has low density and low refractive index. Moreover, it bends lightly light rays.



Qb) Define Malaria. Its symptoms and treatment.

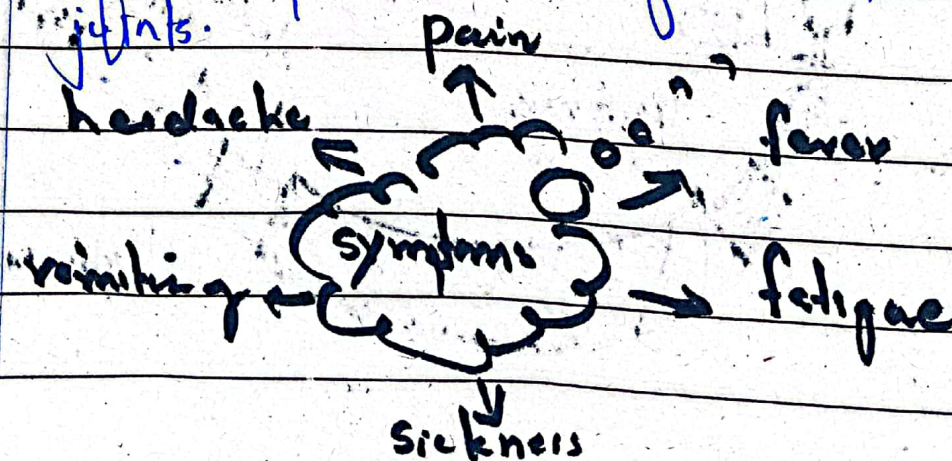
Answer

Malaria

Malaria is a disease caused by bite of mosquito. In fact, it is caused by bite of female 'anopheles' mosquito and is spread in the body of host.

Symptoms of Malaria

A malarial patient feels fever with cold. He/she has high fever, fatigue, headache, vomiting. Moreover, he/she feels sick and feels pain in legs and joints.



Treatment of Malaria

Treatment of malaria is followed by first diagnosis of anti-malarial test. After, diagnosis of malaria, the patient is treated with anti-foetice to get rid of malarial parasites.

Qc) Define GPS. Also describe its segments & working principle.

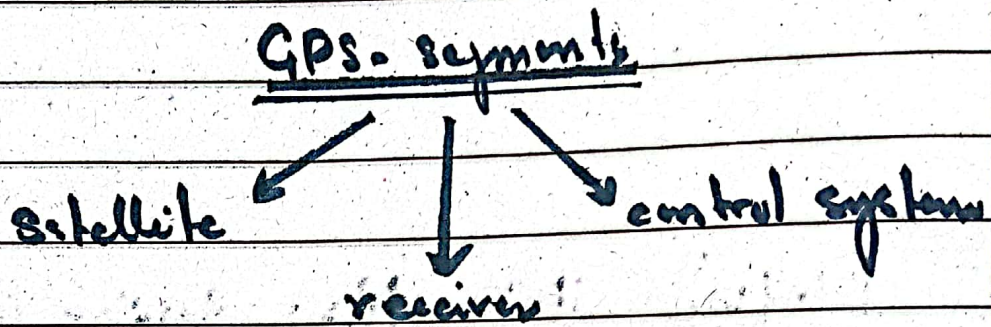
Answer Global Positioning System (GPS)

GPS is a combination of at least ^{twenty} four (24) satellites. In fact, GPS is a navigation based technology used in navigation location purpose.

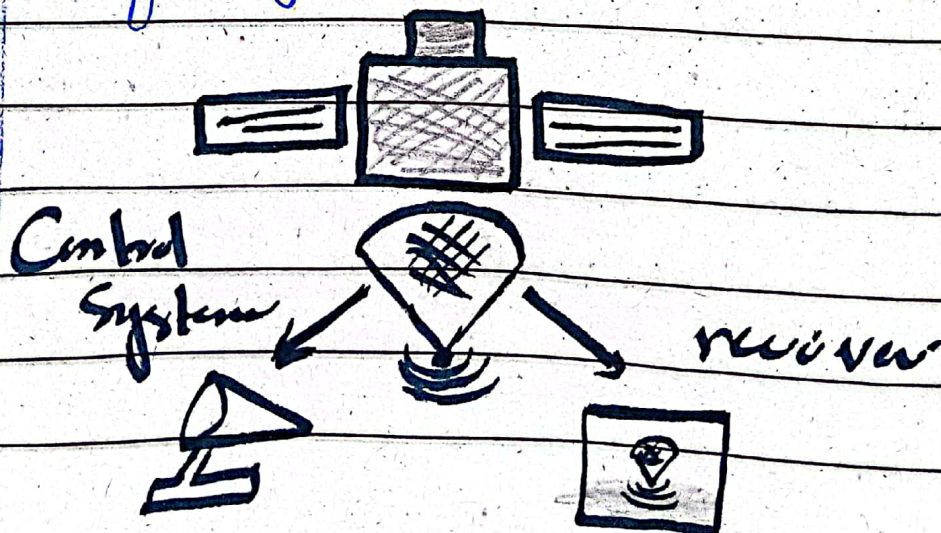
It was designed by first in the US in 1973 by US Defence System. Hence, GPS is navigation tool help in location.

• Segments of GPS - 43
working principle

GPS has three
main segments:



GPS collects data as
a satellite and transmits it
further process. Further, light
and radio signals received
by receivers. i.e. mobile
phone. However, control system
helps in proper functioning
of system.





Qd) Compare Solar and lunar eclipses

Eclipse

"the process or natural phenomenon of astronomical object (against another) is known as eclipses."

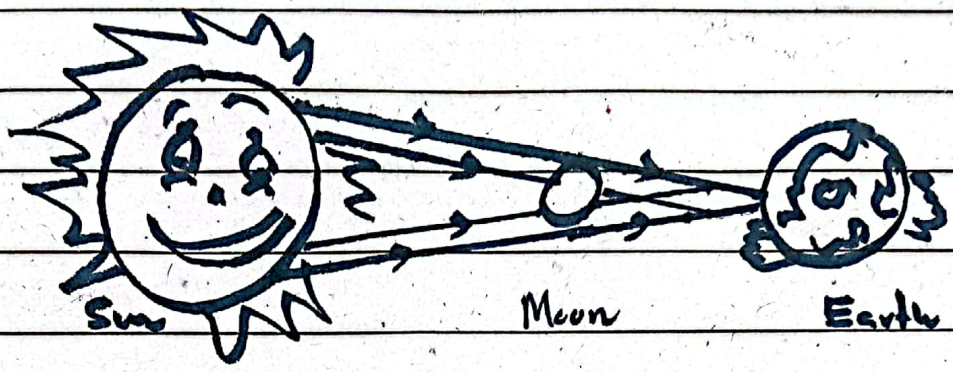
For example: Solar and lunar eclipses

• Comparison of solar and lunar eclipses

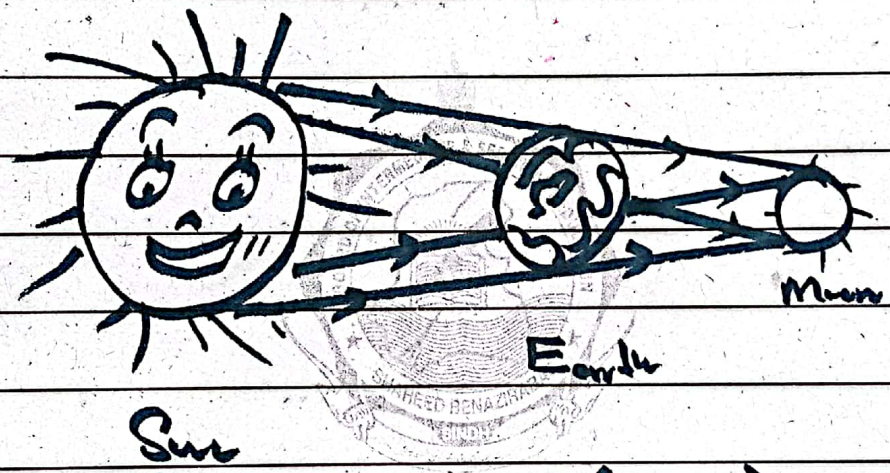
Comparison	Solar Eclipse	Lunar Eclipse
a) Meaning	Solar eclipse is caused by moon interference in the path of sun and earth.	Lunar eclipse is due to earth disturbance in position.
b) position	In solar eclipse, moon takes	In lunar eclipse, earth takes



		mid position	mid position.
c)	occurrence	It occurs during day.	It occurs during night.
d)	frequency	It occurs every eighteenth months	It occurs twice a year.
e)	duration	It lasts for 5 to 7 minutes.	It lasts for an hour.
f)	phase of moon	It takes first phase. i.e. new moon	It takes full phase. i.e. full moon
g)	Appearance	It appears in many places.	It appears in few places.



• Solar Eclipse



• Moon (Lunar) Eclipse