

these steps to improve his symptoms.

- 1 Getting plenty of rest.
- 2 By using heat packs to help muscle aches.
- 3 Doing physical therapy.

The best way to prevent polio is to get vaccinated. Vaccination is usually done in childhood. If the children do not get vaccinated in childhood then they will permanently receive polio due to the effect on their nervous system.

## Symptoms of Polio.

Almost 70% people infected with poliovirus don't have symptoms. Well, some of the common symptoms are given below.

- a) Fatigue
- b) Headache
- c) Anxiety
- d) Sensitivity to light.
- e) Vomiting

## Causes:

Polio can be caused by.

- 1 Drinking contaminated water or getting it into mouth.
- 2 Being in close contact with someone affected with Polio.
- 3 Eating food that has been touched with contaminated water.

## Treatment.

There is no specific medication to treat polio. If any one has paralytic polio, then physical therapy will conduct. Moreover one can follow

(ii)

connected with +ve terminal, current flows.

### ii Reverse biasing

It is the vice versa of forward biasing. Means, when P-type is connected with -ve terminal and n-type is connected with positive (+ve) terminal, There is no recombination of majority carriers, Thus no conduction occurs.

### d) Write a note on Polio.

Polio is a disease caused by a virus that attacks the nervous system. The virus which cause this disease is called poliovirus. It cause muscle weakness resulting in an inability to move or paralysis.

### Types of Polio.

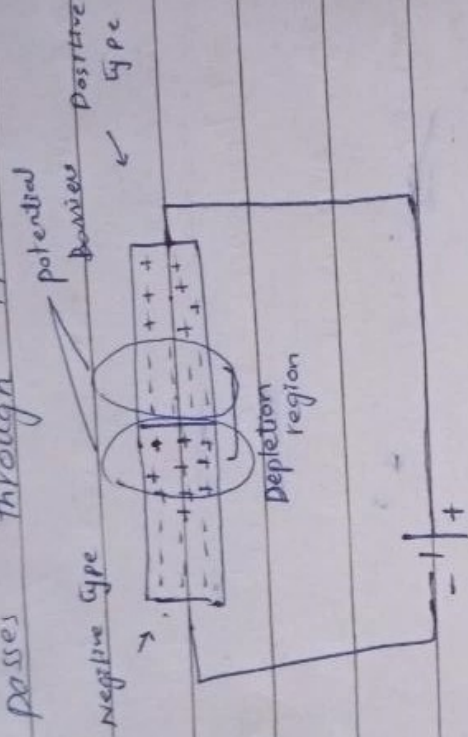
There are three types of Polio.

- 1 Subclinical
- 2 Non-paralytic
- 3 Paralytic

(10)

## b. Explain LED

LED stands for Light emitting diode. It is a semiconductor device, which emits light when an electric current passes through it.



To break the potential barrier, we placed a battery with that material. Positive charges repels each other and same like negative charges do. Potential barriers will break due to the repulsion so that energy produced.

### Types of flow of current.

1. Forward biasing
2. Reverse biasing

#### 1. Forward biasing

When N-type is connected with -ve terminal and P-type is

Q # 5

a- Write uses of any five electromagnetic radiations.

There are 7 types of electromagnetic radiation. Five (5) of them with their uses are given below.

1- Microwave

Microwaves are used for heating as in microwaves oven and for data transmission.

2 Radio wave

Radio waves are used for communication.

3 X-rays

X-rays are used in medical instruments to view the bone structure of body.

4 Visible light

Visible light helps us to see everything around us.

5 Gamma rays.

Gamma rays are used in nuclear industry as well as in medicine.

glucose back into the blood.

ii Loop of Henle.

This absorbs potassium, chloride and sodium into the blood.

iii Distal convoluted tubule. (DCT)

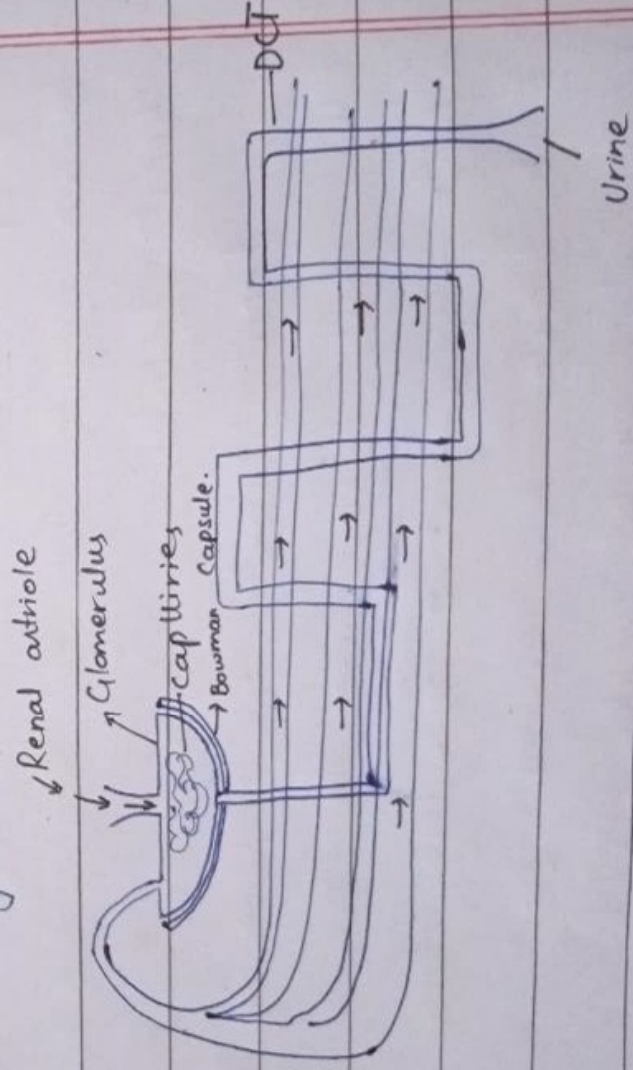
This section absorbs more sodium into the blood and takes in potassium and acid.

### Collecting Ducts

There are collecting duct at the end of each nephrone. This is the section where filtered fluid exit the nephrone.

### Renal veins.

This carries filtered blood from the kidney back to the heart.



### Renal Artery:

It carries blood toward the kidney from the heart for filtration.

### Nephrons.

Nephrons are the basic structural and functional unit of kidney. Each kidney has about 1 million nephrons.

### Glomerulus.

When blood enters in the nephrons through renal artery, it reaches to the cup like structure called glomerulus. In glomerulus filtration of blood takes place.

### The Bowman capsule.

After that it passes through the Bowman capsule into the renal tubules.

### Renal tubules

Renal tubules are a series of tubes that begin after the Bowman capsule and end at collecting ducts.

Each tubule have several parts.

### 1. Proximal convoluted tubules. (PCT)

This absorbs water, sodium and

⑥

d) Explain working of kidney in human physiology.

### Kidney:

Kidneys are bean shaped organs in the renal system. Kidneys help to filter blood before sending it back to the heart. In humans a pair of kidney is present in the abdominal region of the body.

### Functions:

Kidneys perform the following function.

- i It helps in maintaining overall fluid balance.
- ii It regulates and filters minerals from the blood.
- iii It filters waste materials from food, medication and other substances.

### Structure:

- 1 Renal artery & collecting ducts
- 2 Nephrons
- 3 Renal vein
- 4 Renal tubules



phenomenon of the reflection.

### ② Buffer coating:

It is the plastic coating. It is made up of silicon rubber.

Function. It protects the fiber.

### Characteristics of Optical Fiber.

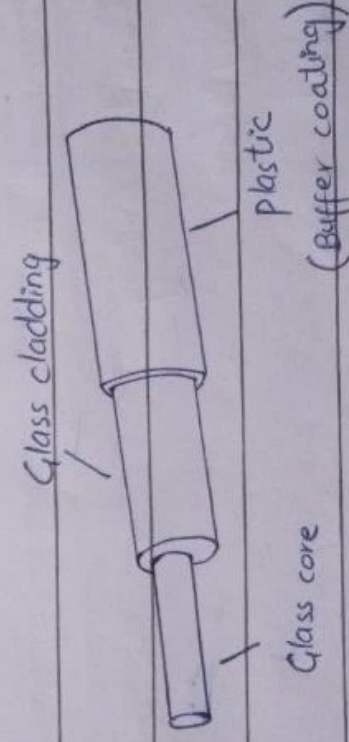
i Fiber optic cable is not affected by EMI effects and can be used in areas where high voltages are passing by.

ii The numbers of nodes which a fiber optic can support does not depend on its length but on the hub.

iii The installation of fiber optic cable is difficult

iv The cost of fiber optics cable is more compared to twisted pair and co-axial.

### Diagram:



b- Write a note on Optical Fibers.

### Definition:

Optical Fibers consist of thin glass fibers or plastic or any dielectric medium which can carry light signals from one end to another.

### Structure of Optical Fiber

It has three parts.

i Core

ii Cladding

iii Buffer coating.

① Core

It is central tube. It is of skinny size and made up of optically transparent dielectric medium. It carries

Function: It carries light from the transmitter to the receiver.

② Cladding

It is outer optical material surrounding the core. Its reflective index is lower than the core.

Function: It helps to keep the light within the core as it uses the

③

## iv- Byte &amp; Nibble

## Nibble

A Nibble is a group of 4 bits.

It can represent

exactly 16 unique

values, ranging from

0000 through 1111.

① A Byte contains 8 bits

② It can represent exactly

256 unique values

ranging from 000000

to 111111.

## v- Natural and Artificial Satellite

## Natural Satellite

① Natural Satellites are natural objects

those satellites which orbits the earth and other planets. revolve around earth.

② Natural satellites can

not communicate on earth

or with other planets

③ Most well known natural

satellite is the moon

of Earth.

④ It is made up of

natural material like rocks,

mineral, water and dust

etc.

## Artificial Satellite

Artificial satellite are

man made objects which revolve around earth.

These satellites can

communicate with

instruments on Earth.

The first artificial

satellite was Sputnik.

These are made up

of metal and

electronic material.

②

Physically that can be utilized as personal computers as well as share information.

- \* It require fewer hardware devices.
- \* It can only cover a certain amount of distance.

### Internet

- \* The internet on the other hand, is the interconnection of a few networks.
- \* It requires various hardware devices.
- \* The internet is accessible from anywhere in the world.

### iii GPS & GIS

#### GPS

- GPS stands for Global Positioning System
- GPS is used to find exact location of things on the earth.
- GPS is a common technology used for navigation.

#### GIS

- GIS stands for Global Information System.
- GIS is used to get information from the map.
- GIS is a system that provides analysis and information on geographical data

## Part - II (SECTION - A)

Q. NO. 2

a) Distinguish the following terms:

i- RAM & ROM

RAM

RAM stands for "random access

memory". RAM is a volatile memory it

means that it stores data temporarily

and you will lose the data when

computer is turned off.

ROM

ROM stands for "read only memory."

ROM is non-volatile memory so it

can save data permanently. It means

that data will not be lost when the

computer is switched off.

ii- Network and Internet

Network.

\* Network is a collection of computer and devices which are connected