

## Question NO-2

### 1 Circulatory system:

Definition:

Circulatory system refers to an extensive flow of blood inside the body. It involves heart, lungs and body as a whole.

### 2 Role of heart in circulation of blood

Heart:

Heart plays a pivotal role in blood circulation. Furthermore, blood circulation is not possible without proper functioning of heart muscles.

Role played by heart during blood circulation.

Heart releases and receives blood from body.

(a) Cardiac muscles

Heart muscles, also known as cardiac muscles, help pump blood to body and also receive it back after coming from lungs and body.

(b) Chamber of hearts.

There are four chambers of heart named Right Atrium & ventricle and left Atrium & ventricle.

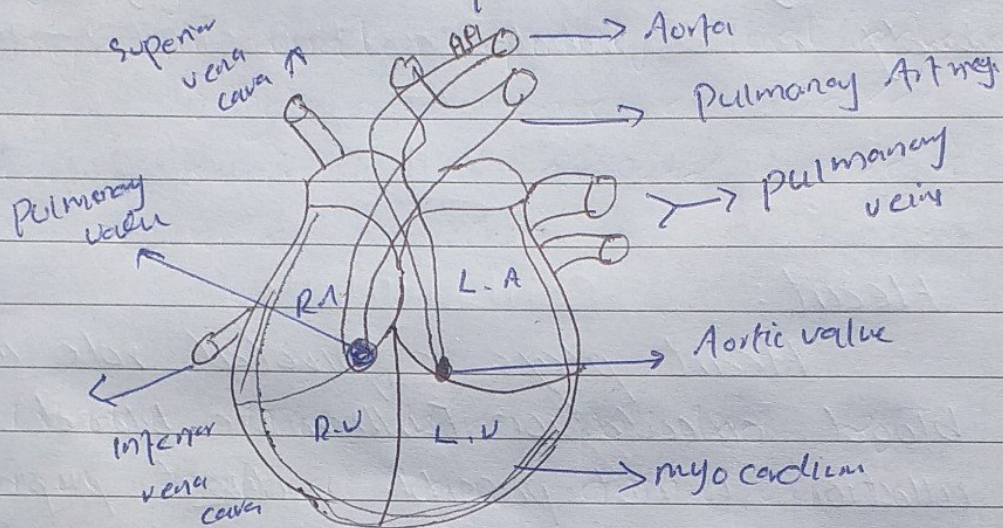


## Right Artrium:

It receives blood from body and releases to right ventricle.

## Left Artrium:

It receives blood from lungs & delivers to left ventricle.



Heart - Structure

(B)

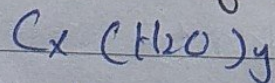
## Carbohydrates:

### Definition:

Carbohydrates are polyhydronic aldehydes or ketones that after hydrolysis yield aldehyde or ketone subunits.

### General formula:

General formula of carbohydrates



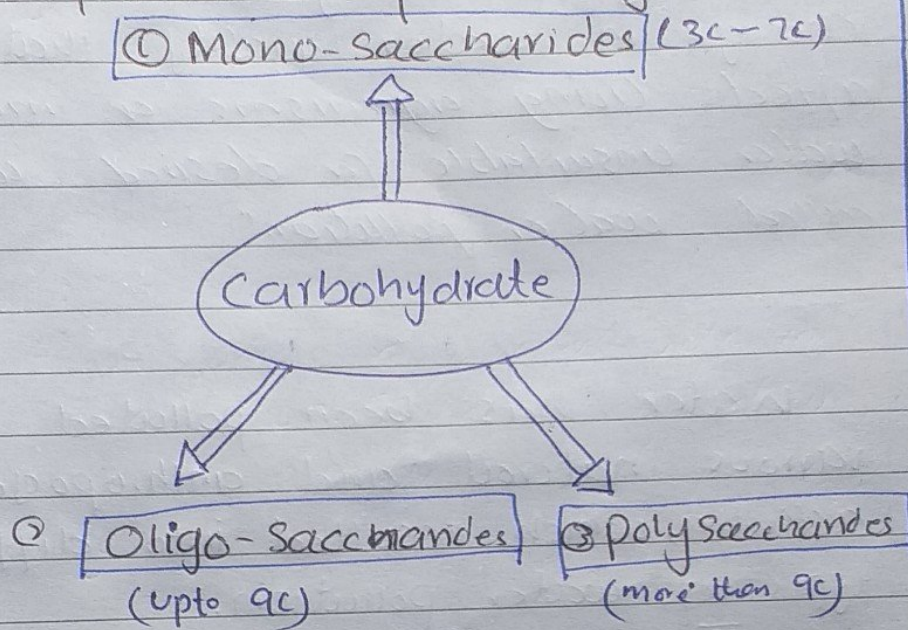
carbohydrates are also known as hydrated carbons, containing one carbon, hydrogen and oxygen, having ratio same as in  $H_2O$ .



## Classification:

Carbohydrates classified into three main groups on the basis of presence of number of carbon atoms in a compound.

Classification of carbohydrate.



	① Monosaccharides	② Oligo-saccharides	③ Polysaccharides
(a)	• They have carbon three to seven.	They are having carbon three to nine	They have carbon more than ten.
(b)	• They are sweet in taste	• They are less sweet in taste	• They are tasteless.
(c)	• Example ① Glucose ② Fructose	• Example Sucrose $C_{12}H_{22}O_{11}$	• Example Starch Glycogen Cellulose



(L)

## 9) Water Pollution:

Definition:

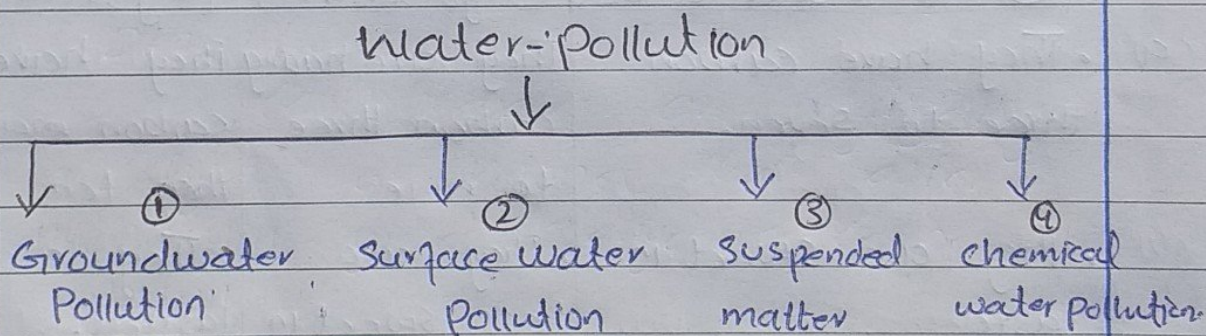
Water pollution is defined by World Health Organization as:

"Any physical, biological, or chemical change in water quality that adversely affects living organisms or makes water unsuitable for desired uses is called water pollution."

## (b) Types of water pollution

Water has been polluted by various natural and anthropogenic activities, which resulted into different types of water pollution.

The main types of water pollution



## (c) Causes of water pollution:

There are multiple causes of water pollution which include human activities and natural changes.



## (1) Domestic Sewage:

People have no proper process to dispose of domestic products. They drain them in sewage, it ends into the near sea. As a result, water becomes polluted.

## (2) Industrial Effluents:

Not only in developed countries but also in developing countries industrial waste is a major source of water pollution.

## (3) Agro-chemicals

Farmers and other field workers use different chemicals, like pesticides and insecticides in fields. Rain water takes them into water bodies.

## (4) Earthquake

Natural activities like earthquake and cyclone also cause pollution in water.



Q NO: 3

## (a) Role of Kidney in Urine formation

The kidney's filter unwanted substances from the blood and produce urine to excrete them.

### Three Stages of urine formation

Stage 1 - Glomerular-Filteration



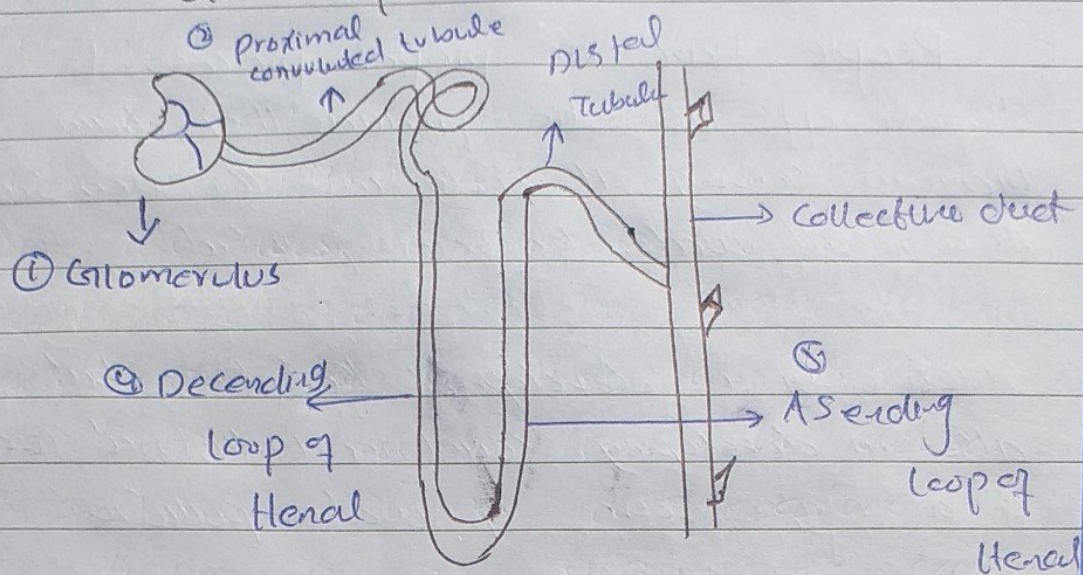
Stage 2 - Reabsorption



Stage 3 - Secretion



## Urine formation.



### ① Glomerular Filtration:

Water and solutes smaller than proteins are forced through the capillary walls & process of the glomerular capsule into the renal tubules.

### ② Reabsorption:

Water, glucose and amino acid and other essential ions transported out of the filtrate into the tubule cells and then enter the capillary blood.

### ③ Secretion: $H^+$ , $K^+$

$H^+$ ,  $K^+$  creatinine, & drugs are removed from the peritubular blood & secreted by the tubule cells into the filtrate.



(B)

## Remote Sensing!

Definition:

Remote sensing is defined as the science and technology by which characteristics of objects of interest can be identified without direct contact.

### Role/applications of Remote Sensing:

Remote sensing has contributed immensely in various fields of environmental science.

(a) Help in gathering Earth's vital information.

Different active and passive sensors use to gather information about the earth's surface.

(b) Research work.

Different information after getting from sensors coupled with computer software, provides opportunity for environmental scholars to expand their research work.

(c) Climate related information.

It provides information about climate related changes and about electromagnetic radiations.



## (c) Greenhouse effect:

(a)

Definition:

It can be defined as: a phenomena in which when light enters into the house, capture by objects like plants and most of the light reflected back. But due to greenhouse light cannot make it to leave the house. As a result, internal temperature of the house becomes high and causes warming inside the house.

Same phenomena is being used for earth & a phenomenal term is used by people for it "Global warming" due to greenhouse effect.

(b) Benefits:

Greenhouse effect has benefits for life on earth.

① Source of energy

Sunlight when reaches ~~at~~ ground loses most of its part in space. The amount reaches absorbed by objects & rest reflects back to space. Due to greenhouse light & heat remains on earth to warm it to sustain life.

② Cooling may kill everything on earth

In the absence of greenhouse effect earth <sup>will</sup> possibly become too cool to support life on earth.



## (9) Global warming

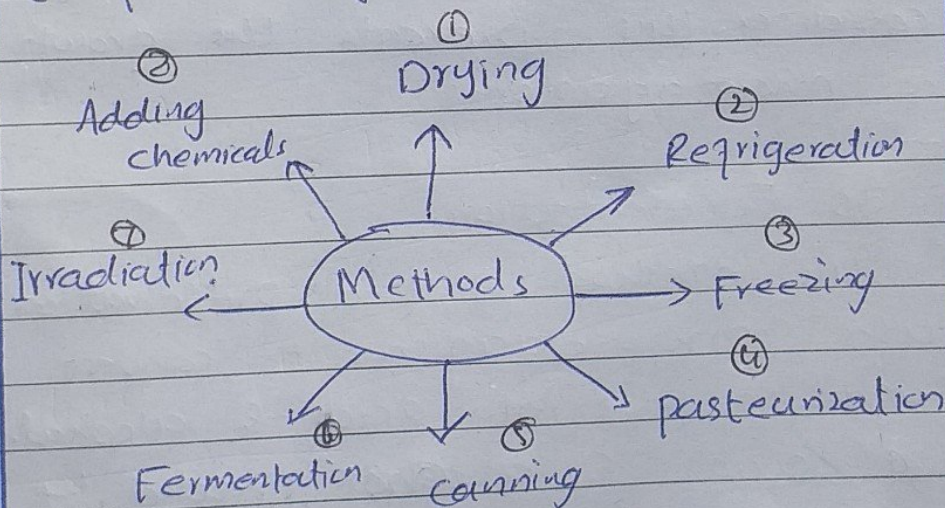
Greenhouse effect cause global warming.

① Traps the heat.

Due to various gases in the atmosphere, light & heat get trapped in lower atmosphere. As a result, temperature increases and cause warming the earth. It is known as global warming.

## (10) Food preservation methods

Various techniques and methods have been used by people to preserve food. Some of the methods to preserve food are is:



### ① Drying:

This is one of the oldest methods of food preservation.

Process:

It works by removing water from food, which makes it difficult



for microorganisms to grow. Naturally,

① Sun drying

• wind drying

are two ways to dry food. Artificially, dehydrator is being used to dry the food.

② Freezing :

The method of food preservation works by freezing the food to a very low temperature, which stops the growth of micro-organisms.

③ Canning :

In this food preserving method, food is heated at a high temperature and then sealed in an airtight container. This prevents the growth of micro-organisms.

④ Fermentation:

This method of food preservation uses micro-organisms to convert sugars in food into acids & alcohol. These acids & ~~alcohol~~ alcohol created by fermentation inhibit growth of other fatal micro-organisms.

⑤ Irradiation:

It involves ionization by radiation to kill organisms in food. So, food can be stored for many years.