

QNO: 2

## (a) Dengue, Causative Agents and their Symptoms

What is Dengue?

Dengue is a mosquito born viral disease that is mostly caused by the bite of female mosquito named Aedes Mosquito. This disease spreads when a female mosquito bite an infected person and carry that viral in its sting and by biting others healthy person, it cause infection.

⇒ Symptoms of Dengue

Mild Dengue: In mild dengue infected person feel cold, high fever, headache and fatigue.

Severe Dengue: In severe dengue infected person has severe abdominal pain headache, high fever which sometimes causes death to person.

⇒ Causative agents

Causative agents are the micro organisms which cause diseases in host. Here are examples of causative agents.

**Bacteria:** Bacteria is single celled organism which causes diseases like tuberculosis and different type of bacterial infections.

**Virus:** Virus is a non cellular body which can become live in any living body otherwise, it is dead, Virus causes many diseases like, flu, HIV/AIDS and dengue fever.

**Fungi:** Fungi is a multicellular organism and sometimes it can be unicellular it can cause many fungal infections which are dangerous for skin and body.

**Parasites:** Parasites are from group of Protozoa and they cause diseases like Neurodegenerative diseases and some others.

## (B) Dark Matter and Dark Energy

What is Dark Matter?

Dark Matter was introduced by Albert Einstein it is a type of matter which is in huge amount in this universe. This is type of matter which can not interact with electromagnetic radiations, like light, therefore it can not be seen. It makes

almost 27% of universe.

### Function of Dark Matter

Function of Dark matter is to form a gravitational object. This makes galaxies and planets to rotate in this universe.

### Dark Energy

Dark Energy is a form of energy that is present in this universe. It makes 68% of universe. And due to this energy the universe is expanding.

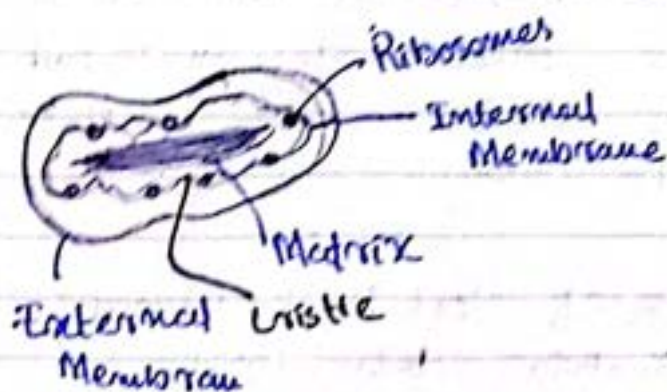
Togetherly dark matter and dark energy make almost 95% of universe in which dark matter binds astronomical bodies together to move in the universe and dark energy cause them to expand.

## (c) Mitochondria It's Structure and Function

Mitochondria is a double membrane organelle present in a cell. This is often referred as power house of cell because it generate Adenosine Triphosphate (ATP). ATP is a energy currency produced by

mitochondria which is essential for many cellular functions.

### Structure of Mitochondria



**Outer membrane:** Outer membrane of Mitochondria is smooth and permeable which allows all molecules and small ions to enter.

#### Inner Membrane:

Inner membrane is second membrane with structure called Cristae. It provides electron chain which is essential to make ATP.

**Matrix:** Matrix is a fluid filled in inner space of mitochondria which is essential to make proteins which are essential for many cellular functions such as Krebs cycle, DNA and synthesis of ribosomes.

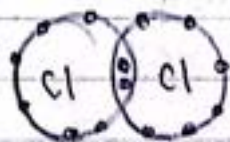
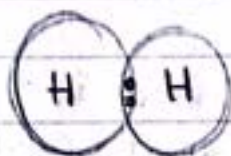
## (D) Covalent Bonds and Its Types :

Covalent bonds are chemical bonds which are formed when two atoms form bond by sharing pair of electron. In this bonds atoms do not share complete electrons but they partially share electrons and complete their octate rule.

⇒ Type of ~~etc~~ covalent bonds

(i) Nonpolar covalent bond

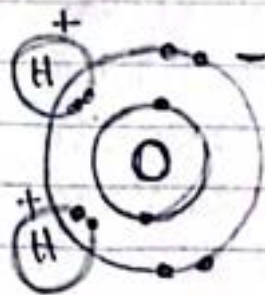
Non polar covalent bonds are the type of bonds in which two atoms equally share their electrons such as two hydrogen bonds and two Cl atoms bonds.



Polar covalent bonds

Non polar covalent bonds are the bonds in which one atom shares electron and

Other atom does not share any electron instead of that. Such as oxygen and hydrogen bond and hydrogen and chlorine bond. In this bond donor atom get positive charge and receiver gets negative charge. Therefore this is called a polar bond.



### Qno 3: Noise Pollution and its harmful effects

Noise Pollution is presence of excessive sound in environment which can cause many health issues.

#### ⇒ Reasons of Noise Pollution

Noise Pollution is caused by industrial activities, loud speakers, vehicles and construction work.

#### Harmful effects of Noise Pollution

- 1) Hearing Impairment: Continuous sound noise can cause hearing impairment
- 2) Cardiovascular diseases: It can cause disease related to heart.
- 3) Mental health issues: It can cause mental disorders, stress and sleep disorder.

#### ⇒ Way to Curb the noise Pollution

Noise Pollution can be reduced by introducing sound barriers such as trees and other sound barriers, by constructing sound proof building indoors noise

can be reduced. Sound can also be reduced by introducing Non Motor Vehicles Such as bicycles and electrical vehicles.

## Ques (B) Fibers and Balanced diet

What are fibers?

Fibers are indigestible carbohydrates and part blood component which help in maintaining good health. It support digestive system, prevent constipation helps in bowel movement.

⇒ Types of fibers

(1) Soluble fibers

Soluble fibers are the fibers which can dissolve in water in form of jelly like substance and is found from apple, barley and brown beans. It can help in lower cholesterol and glucose.

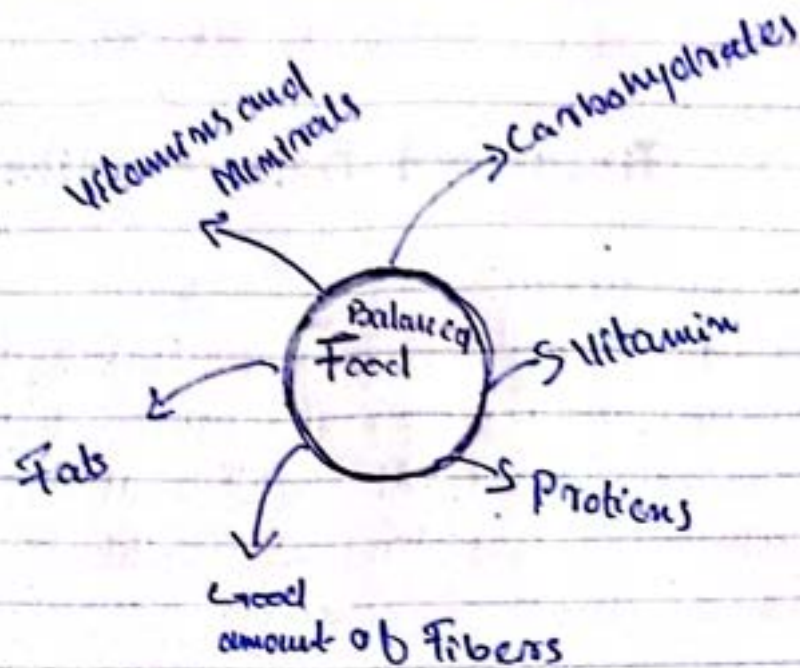
(2) Insoluble fibers

Insoluble fibers are the types of fibers which do not dissolve in body and they help in digestion and prevent constipation. These fibers are found in Nuts, whole grain



and in Vegetables.

Essential Elements for balanced diet



### Balanced Food

A Platter of food to be considered balanced diet when it has essential elements food: Such as Carbohydrates, Protein, Vitamins, ~~and~~ Fats, Minerals and good amount of fibers. All these components have essential function in body which keep a person fit and healthy. These all components are required from different source of food such as, Meat, Milk, vegetables, fruits and from dry fruit etc.

## (c) - water quality and Standards ;

Water quality and standards are essential to check. Because they define the criteria to drink water. It define that water is healthy to drink or not.

Here are some qualities and standards of water.

### (1) Microbiological Standards

Microbiological standards means these standards define that there should be absence of pathogen like bacteria, virus and protozoa which cause illness.

### (2) chemical Standards

Chemical standards define that there should not be any chemical present in drinking water like Lead, arsenic and pesticides are harmful for health. Presence of chemical like these can cause threat to life.

### (3) Physical Standards

Physical standards mean water should be clean in

appearance, its color, and odor and smell also can define that water is contaminated and it can be harmful for health.

## D) Lithosphere Rocks and Minerals

What is lithosphere?

Lithosphere is outermost rigid part of earth layer. It is divided into plates which float on the mantle. Because of these layers volcanic eruptions and earthquake activities take place.

### Rocks

Rocks are the natural masses of minerals or mineral like materials which are present on the outermost layer of earth.

### Types of Rocks

- (1) Igneous Rocks: These are the rocks which are formed by earth's magma or lava.
- (2) Sedimentary Rocks: These rocks are made up from compacted sediments.
- (3) Metamorphic Rocks: These rocks are formed from already existing

7 rocks when load or pressure is applied on them.