

 Q. No. 2

- Define the term malnutrition, elaborate its major causes and consequences.
- Differentiate between food contamination and adulteration.
- What are computer buses? Differentiate RAM and ROM?
- What are geo-stationary satellites? Distinguish natural & artificial satellites, how many artificial satellites of Jupiter are there?

Q. No. 3

- What is meant by the term double circulation? Briefly describe how the heart is adapted to keep blood flowing in a double circulation.
- Liver is a chief chemist. Comment.
- Comment, the greenhouse effect is a blessing. Also discuss enhanced greenhouse effect and its relation in global warming?
- Write a note on the following
a) Working of GPS b) Working of Mobile Phone

Q. No. 4

- Differentiate between temperate and tropical cyclones.
- Differentiate star & planet. How a star becomes a black hole?
- Why do atoms form chemical bonds? Explain structure of water.
- What are conductors, semiconductors, metals, plastics, and ceramics? Give an example of each.

 Q. No. 5

- What is Radioactivity? Differentiate between natural and artificial radioactivity.
- What is dengue fever? Discuss its causes, symptoms, modes of transmission, and preventive measures.
- Write the steps involved in Solid Waste Management. Discuss the main issues of Solid Waste Management in our country.
- What do you understand by the term Population Planning? Highlight the different benefits of Population Planning.

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QUESTION: 2

Part "A"

Malnutrition:

"When the food does not contain all the essential nutrients required for growth and normal functioning of the body is called malnutrition."

Causes of Malnutrition

1) Inaccessibility to food:

When food is inaccessible to people due to shortage of food, financial constraint and inability to access markets for food due to long distance.

2) Digestion problems:

The inability to digest food also leads to malnutrition.

3) Consumption of Alcohol:

Over consumption of alcohol can lead to the loss of ~~apap~~ appetite and malnutrition.

(4) Psychological Problems:

The psychological problems in people can lead to malnutrition.

(5) Oral Diseases:

Oral diseases in patients result in the inability to take food and, as a result, malnutrition occurs.

Consequences of Malnutrition:

(1) Kidney Dysfunctioning:

Malnutrition results in kidney dysfunctioning.

(2) Cardiac Diseases:

Malnutrition also leads to cardiac diseases in humans.

(3) Loss of Immunity:

It also leads to the loss of immunity in humans.

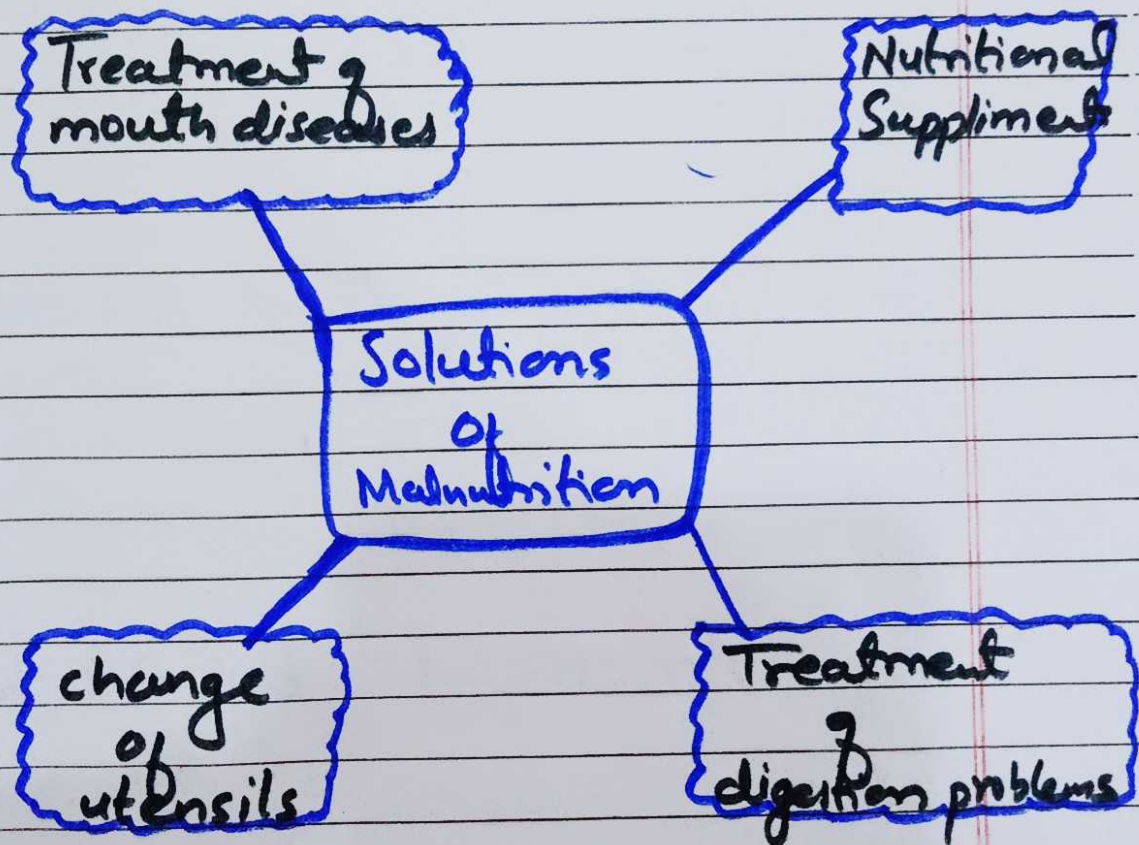
(4) Skeletal problems:

It results in skeletal defects in humans.

5) Brain weakness:

It leads to the poor development of brains in child patients.

Solutions of malnutrition:



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~~Part~~ Part "b"

Difference between Food Adulteration and Food Contamination

(A) Food Adulteration:

(1) Intentional Addition of Substances:

The intentional addition of certain substance to food items is called food adulteration.

(2) Purpose of Food Adulteration:

It is being done to increase profits, reduce price and mimic the original quality of food.

(3) Practiced by Merchants:

It is practiced by certain merchants to increase profits.

(4) Trust deficit of public:

It leads to trust

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deficit of general public
and food merchants.

(5) Examples of food Adulteration

Food Item	Adulteration
1) Milk	water
2) Ghee	Boiled Potato
3) Black pepper	Papaya seed

(B) Food Contamination:

(1) Unintentional Addition of substances:

The unintentional addition of pathogenic substances in food during food preparation and packing is called food contamination.

(2) Effects of Food Contamination:

Food contamination results in several diseases in humans.

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(3) Not Practiced
by Merchants:

Unlike food adulteration,
food contamination is
not practiced by any
merchant.

(4) Qualitative tests
for Food contamination,

(certain qualitative
tests like food spectrometry
should be carried out
before consumption of
food by Public)

(5) Examples of Food
Contaminations,

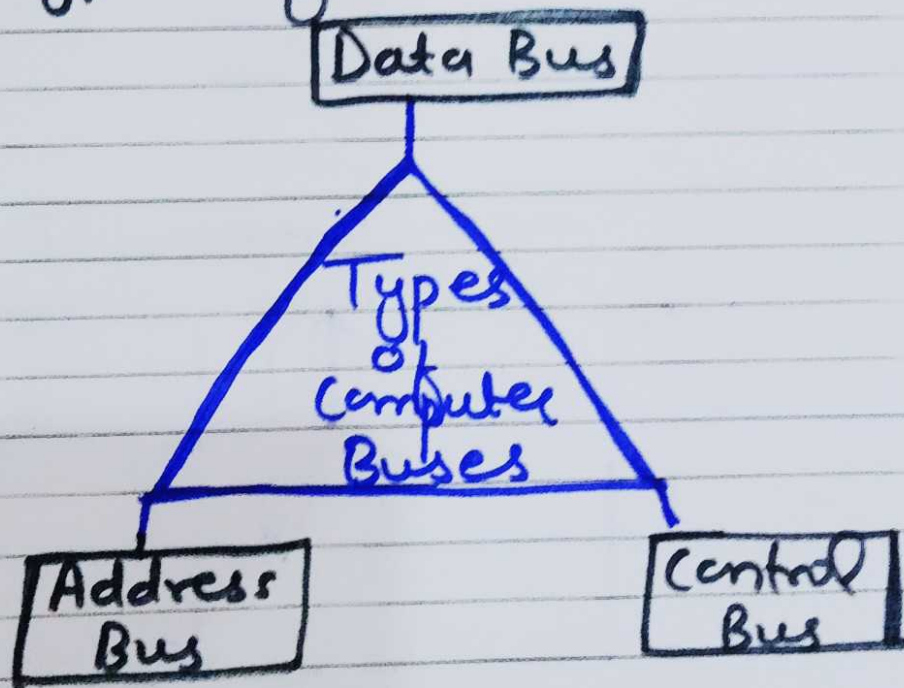
Bacteria and fungi
(Rhizopus) are common
food contaminants.

Part "c"

Computer Buses:

These are parts of computer which help to regulate the functioning and connecting parts of computer like CPU (Central Processing Unit), Memory and Input/Output devices.

Types of Buses



1) Data Bus:

→ It helps to connect different parts of computer.

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→ It is bidirectional

(2) Address Bus:

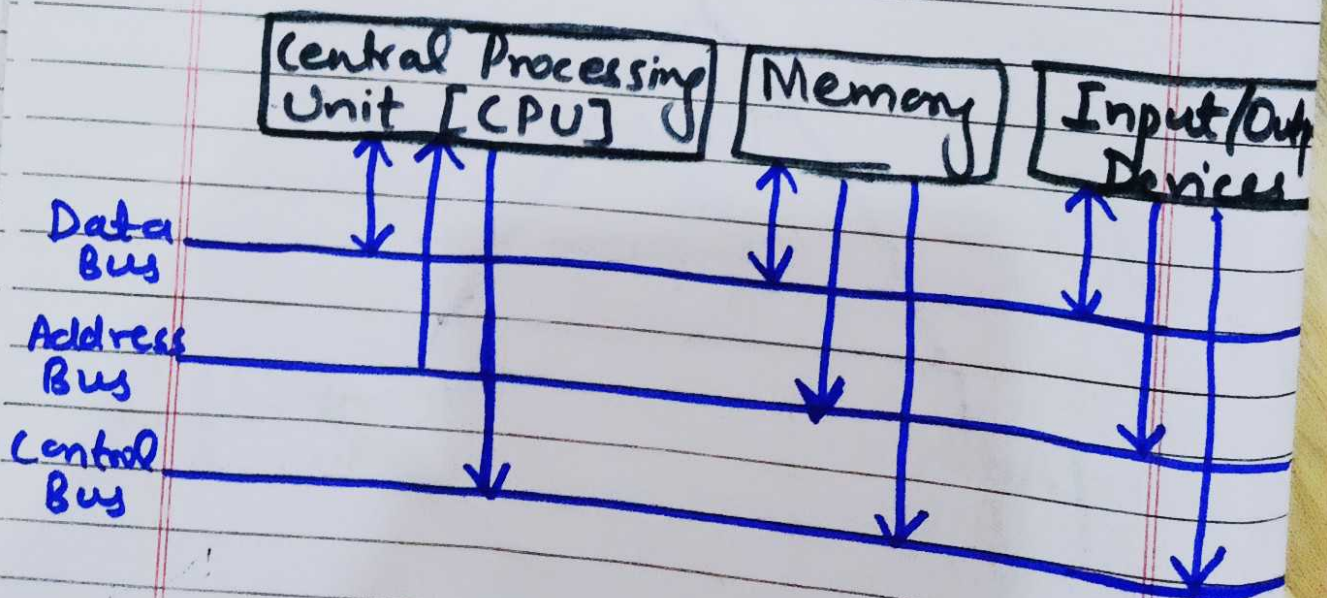
It helps to find the address of a data in a memory.

→ It is unidirectional

(3) Control Bus:

It controls the functions of data and Address Buses.

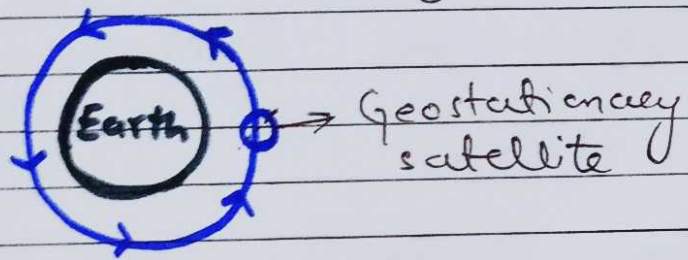
Diagrammatically:



Part "D"

Geo-stationary Satellites:

These are types of artificial satellites which moves with the same speed and rotate in the ~~same~~ some direction (anti-clock wise) as that of the earth



Difference between natural and Artificial satellite

Natural Satellite	Artificial Satellite
1- Luminous	Non-Luminous
2- Rocky in Composition	Electronic body
3- Permanent	Temporary
4- long distance b/w Earth & N. Satellite	Short Distance b/w Earth & A. Satellite
5- Stable by Gravity	Decrease in gravity & destroy

Natural Satellite

1) Luminous by Sunlight:

It is luminous due to the sunlight.

2) Composition of Natural Satellites

It is made up of rocks.

3) Life Span:

These are permanent satellites

4) Distance b/w the Earth & N. Satellites:

There is long distance between the Earth and natural satellites.

5) Stability of N. Satellites:

These are being stable by the gravity of the Earth.

6. Example of N. Satellite:

Moon is the example of natural satellite of the Earth.

Artificial Satellites:

The man made satellite are called Artificial Satellites

1) Non-Luminous Satellites:

These are non-luminous satellites.

2) Composition of A. Satellites:

These are made up of electronic materials.

3) Life Span:

These are temporary satellites

4) Distance b/w The Earth & A. Satellites:

There is short distance between the earth and A. satellites

5) Stability of A. Satellites:

These are less stable as they are destroyed by the decrease in gravity

6) Examples of A. Satellites

Sputnik was the first

Artificial satellite launched
by Russia (Formerly USSR)

* Artificial satellite of
Jupiter:

Juno spacecraft is
the only artificial satellite
of the Jupiter launched
in 2016 to the atmosphere
of Jupiter.

QUESTION: 5

Part 'A'

Radioactivity:

The release of high energy particles (α, β, γ) from the unstable nuclei is called radioactivity.

→ Radioactivity was discovered by Mary Curie.

Difference b/w Natural & Artificial Radioactivity:

A) Natural Radioactivity:

The atom which is naturally unstable and releases energy is called natural radioactivity.

1) Unstable Initial atom:

The initial atom is unstable.

2) Uncontrolled Process:

It is an uncontrolled process.

Example:

Uranium is a natural radioactive element.

(B) Artificial Radioactivity:

The process in which an element is made unstable by the strike of neutron to release energy is called Artificial Radioactivity.

(1) Stable Initial element:

The initial element is stable in Artificial radioactivity.

2. Controlled Process:

It is a controlled process i.e. radioactive element in a nuclear reactor.

Example:

Nuclear bomb is an example of Artificial Radioactivity.

Particles Released from Radioactivity:

- α Particle: Positive Particle
- β Particle: Negative Particle
- γ Particle: Neutral Particle.

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Part "b"

Dengue Fever:

It is a vector-borne disease in humans.

Causative Agent:

The causative agent is Aedes Aegypti and Aedes Albopictus mosquito which transfer the disease to humans.

Symptoms:

The symptoms of Dengue include;

- a) Fever
- b) Headach
- c) Vomiting
- c) blood in gums
- d) Respiratory problem.

Modes of transmission

Aedes mosquito transfer Dengue fever from infected to healthy person.

Aedes mosquito is

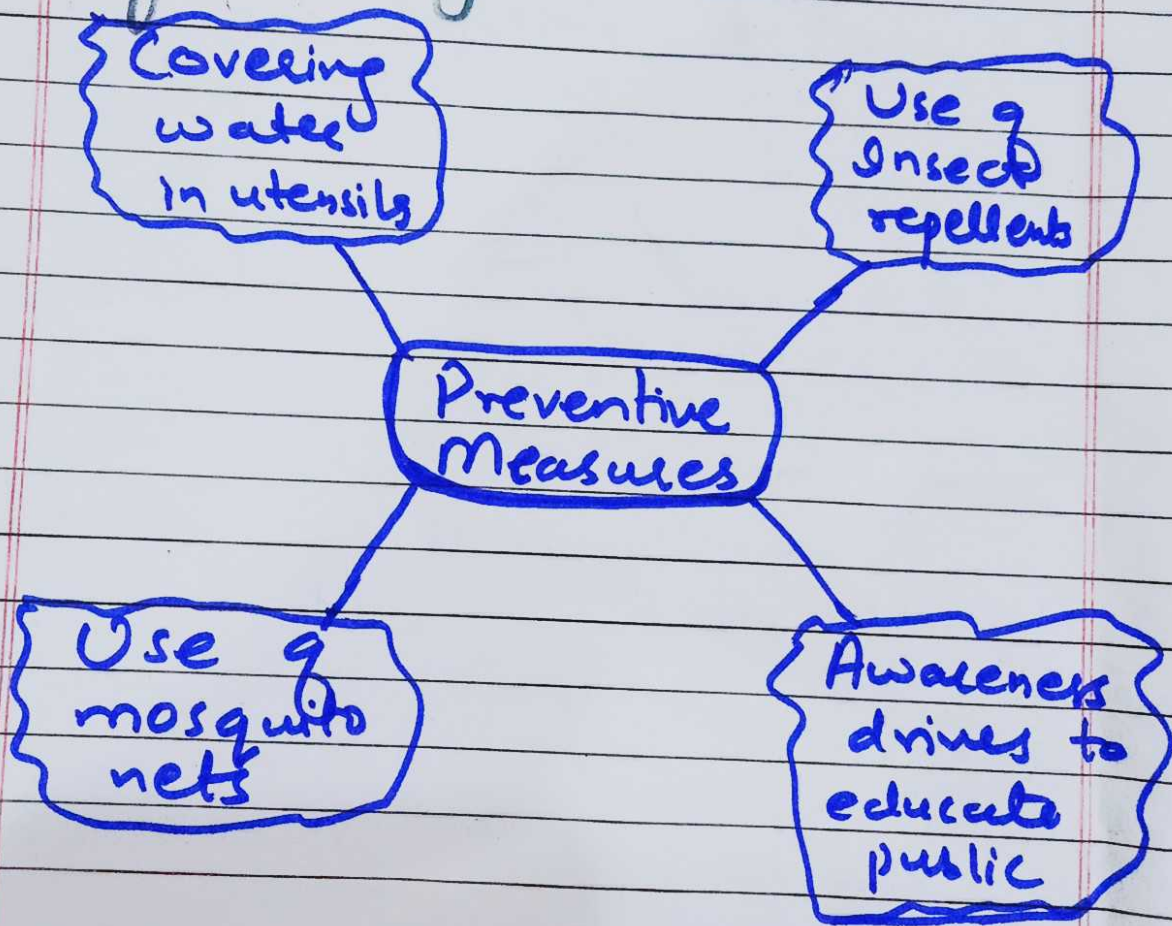
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involved in the transfer
of dengue fever from
infected to healthy humans.

Preventive Measures of Dengue Fever



Part 4c

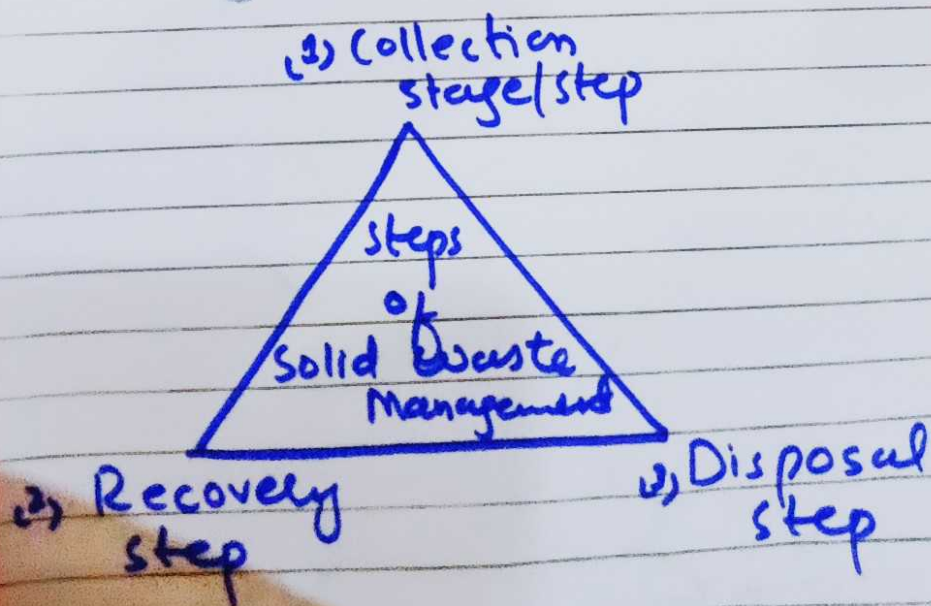
Solid Waste Management:

It is an institutionalized process of reducing waste.

International Report about solid waste:

As per Solid Waste Outlook Report 2024, "24 billion metric tonnes of waste produce in 2024 and in 2025 it will reach 3.6 billion metric tonnes of waste."

Steps of Solid Waste Management:



(1) Collection Step:

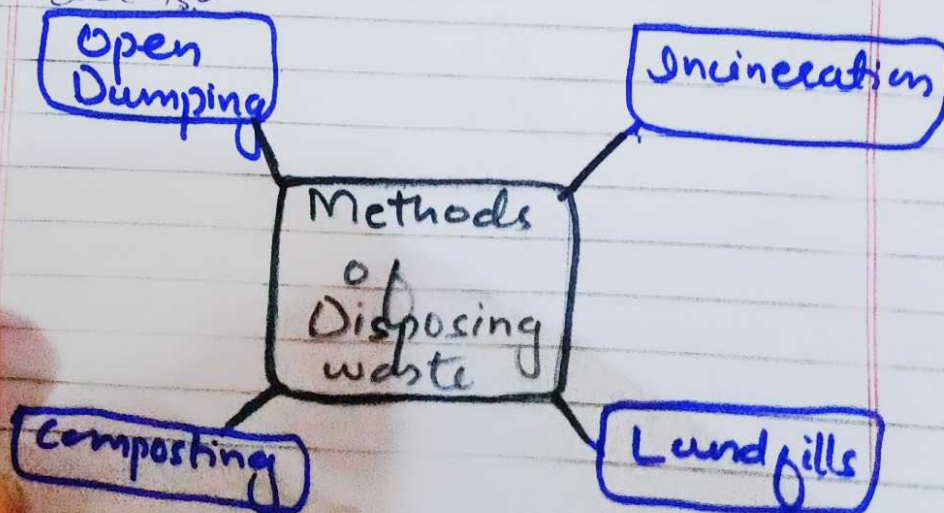
This step involves the collection of waste from homes and commercial areas using sanitary workers and vehicles. The collected waste is deposited at certain place.

(2) Recovery Step:

The recovery step involves the separation of those waste which can be recycled and sold to industries for money.

(3) Disposal of waste step:

This step involves the disposal of waste far from residential areas.



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Main Issues in Pakistan: of SWM

1) Problems Related to Collection Stage:

(a) Sanitary workers are hired on contract base and less financial incentives are provided to them.

(b) Less collection of waste.

2) Less facilities for Recycling of waste.

(a) There are fewer to no facilities for the recycling of waste. As a result, plastic wastes pollute the environment.

3) Problems related to the disposal of waste:

(a) Open disposal of

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waste which leads to
diseases in humans and
reduce the aesthetic quality
of an area.

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Part "D"

Population Planning:

It is a systematic process to reduce population to tackle the problem of over population.

Benefits of Population Planning

