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GSA - I

Final Test

Section - I

QNo: 2

(A) Working of human kidney

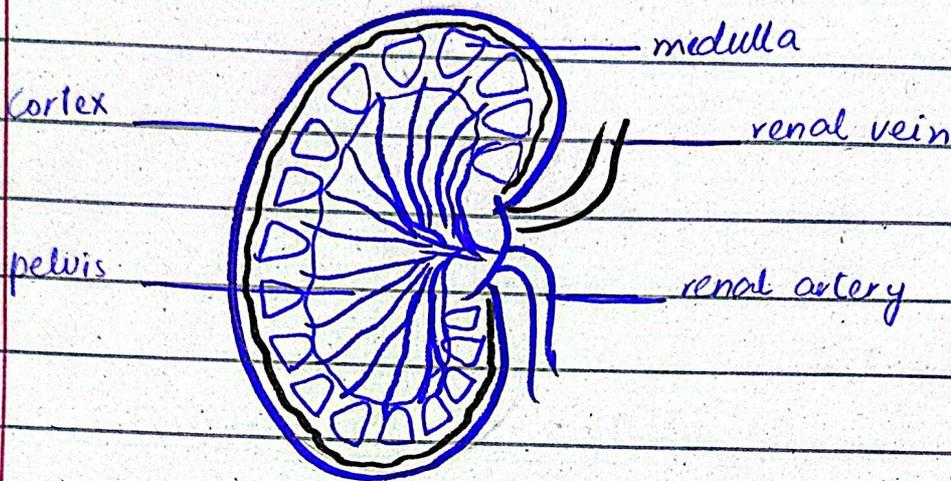
a. What is a human kidney?

Human body has a pair of kidney on left and right sides. Kidney is an organ in the human body that is mainly responsible for the purification of blood, filters excess salts from the blood and transport urine to the excretory system.

b. Construction of a kidney,

A kidney is like a bean shaped structure composed of cortex, medulla, pelvis, renal vein and renal artery.

### c. Diagram of kidney,



### d. Working of a kidney,

Kidney plays a vital role in filtration of blood in a human body. The working of kidney occurs in following steps:-

**(i) Deposition of blood;** The unfiltered blood is deposited into the kidney through renal vein and enter into the kidneys for filtration.

**(ii) Distribution of blood in medulla;** As blood enter the kidneys, it is distributed among pyramid like structure known as medulla. Medulla absorbs the excess salts from the blood.

(iii) renal pelvis; Renal medulla sends the blood to renal pelvis where further absorption of salts take place and even minute and non-required salts are filtered from the blood.

(iv) Renal artery; The filtered blood is now moved to renal artery and is ready for distribution.

(v) The excess salts; The salts removed from the blood are collected in the kidney are sent down to ureters from they will be moved to urinary bladder for excretion in the form of urine.

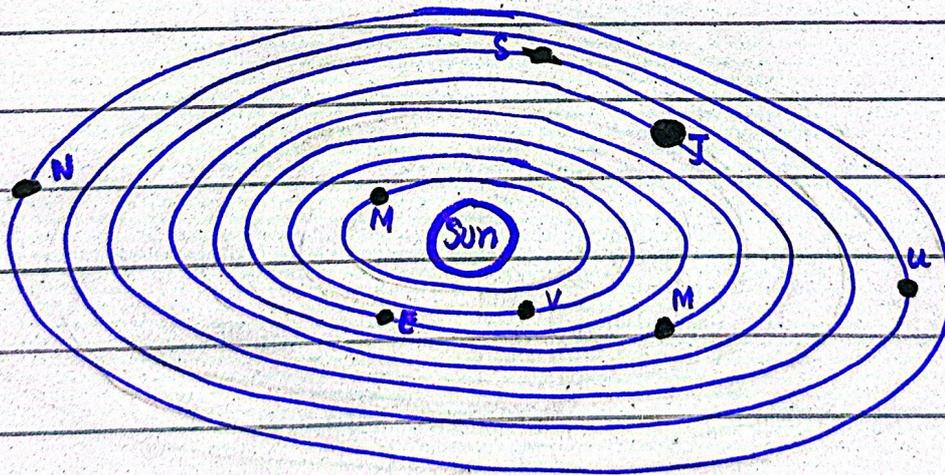
QNo: 2

## (B) Solar system and its components

### 1. What is a solar system?

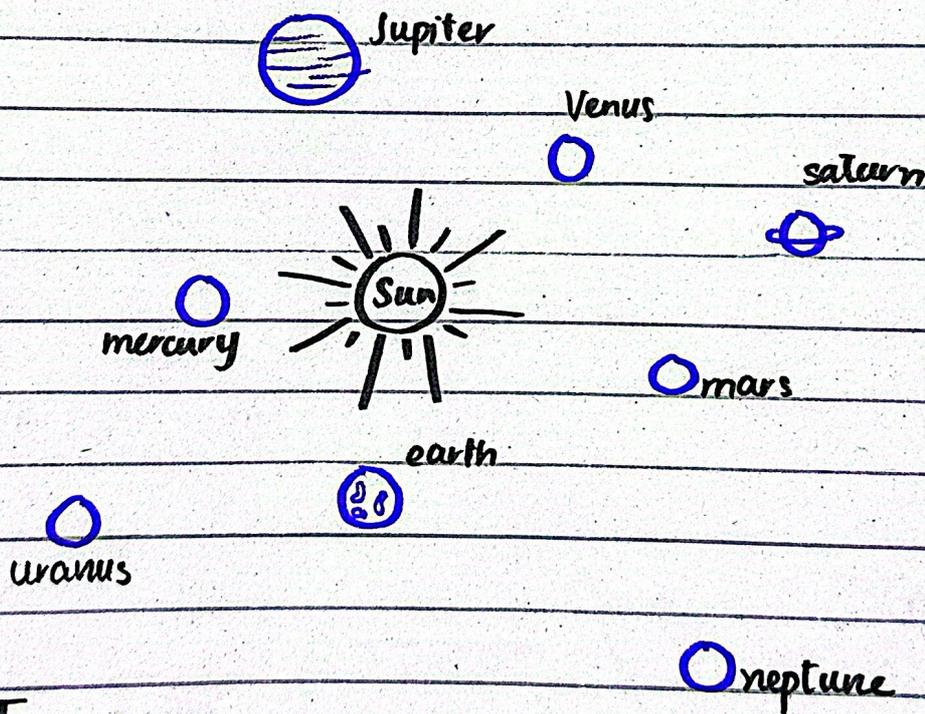
A solar system is a planetary arrangement in astronomy in which celestial bodies like planets and asteroids revolve in solar orbits around a one star known as sun.

### 2. Illustration of solar system;



### 3. Components of solar system:

Solar system comprised of eight planets, a sun that act as a center of gravity and multiple asteroids revolving around the sun. These planets revolve in their specific orbit and are at a distance of millions of light years from each other. These planets are:



F → Jupiter is the largest one

A → Saturn has a unique ring of rocks

C → Neptune is the coldest one

T<sub>s</sub> → Earth is the only planet with life

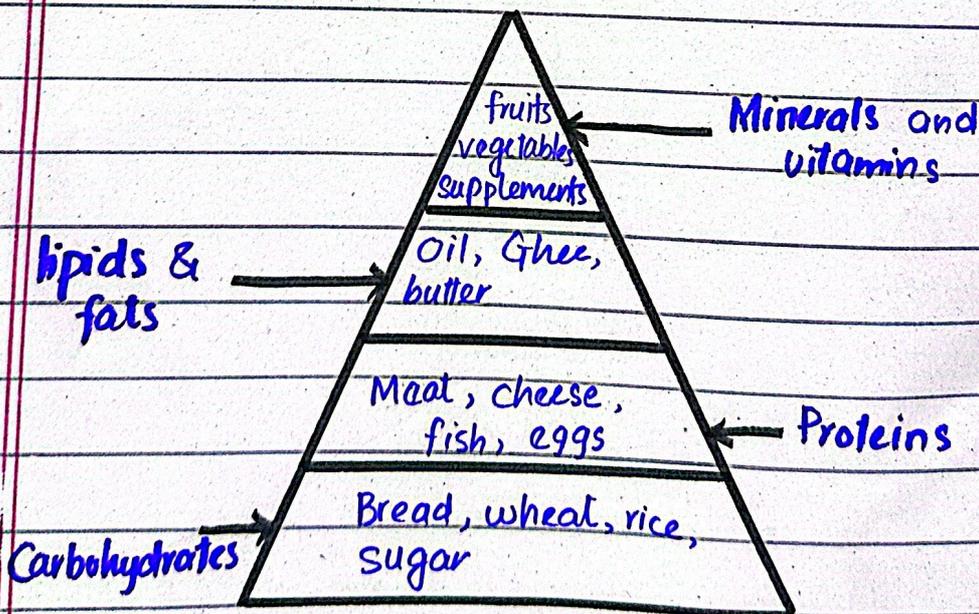
QNo: 2

## (c) Importance of balanced diet

### 1. What is a balanced diet?

A balanced diet is a well-composed food content incorporating all the macro and micro-nutrients required in sufficient amount by human body and the correct amount of hydration.

### 2. Balanced diet,



### 3. Components of balanced diet;

#### (i) Carbohydrates;

Carbohydrates are the most essential and abundant nutrient required by human body. Human body sustains on carbohydrates because they are the instant source of energy.

#### (ii) Proteins;

Proteins are another most important nutrients required by human body. An average human body requires 60-70 grams of protein per day for healthy muscle health.

#### (iii) Lipids and fats;

An adult human body requires lipids and healthy fats for sustainable and proper functioning of organs.

#### (iv) Minerals and vitamins;

There are numerous minerals and vitamins required by human body and regulate healthy life style and inhibit diseases in human bodies.

## QNo: 2

(d)

### Animal cell, plant cell and micro-organism cell.

1. What is a cell?

A cell is the basic structural and functional unit of living organisms that supports life

2. Types of living organism cells,

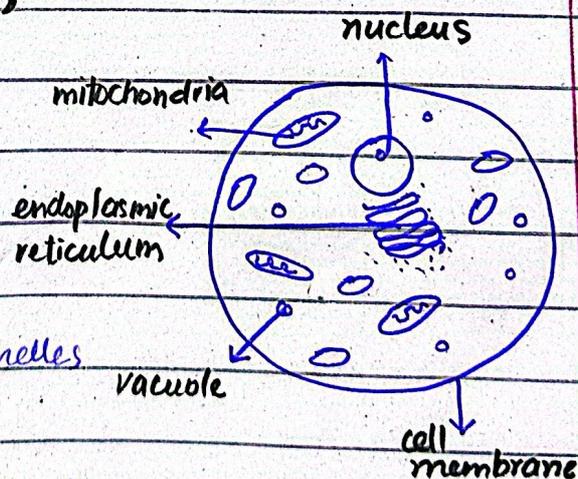
Animal cell

Plant cells

single cells

3. Animal cell;

An animal cell is a single unit composed of multiple cell organelles with a prominent nucleus in the center.

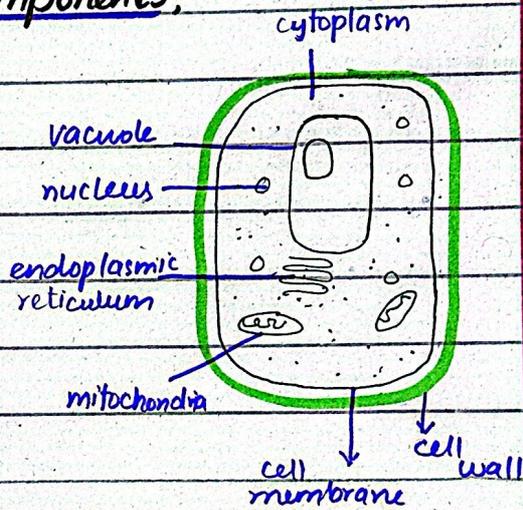


#### 4. Components of animal cell,

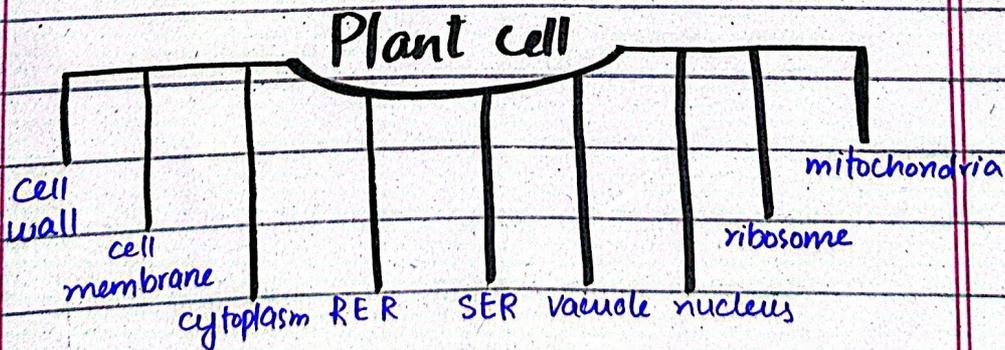
- Cell membrane
- prominent nucleus
- ribosomes
- cytoplasm
- mitochondria
- endoplasmic reticulum
- vacuoles

#### 5. Plant cell and components;

A plant cell is a rigid and well-structured cell composed of cell wall and cell membrane.



Unlike animal cells, plant cells have a prominent vacuole and tiny nucleus. The key components of plant cell are:



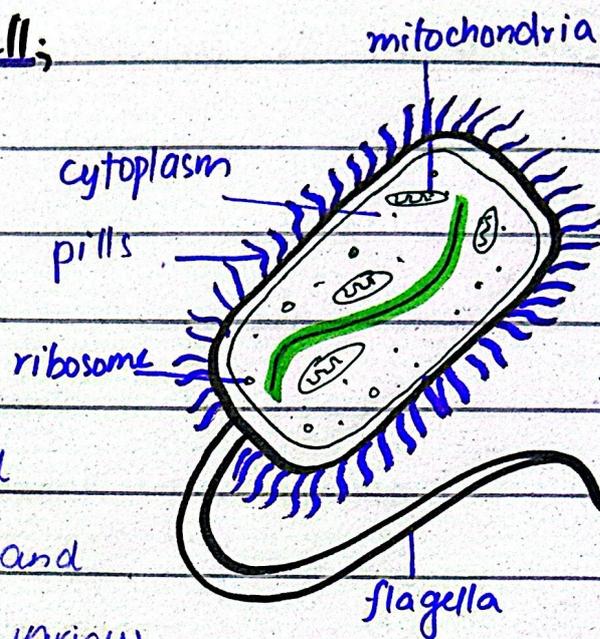
## 6. Single unit cell;

Micro-organism cells are single unit organelles.

They are composed of single cells and often found in various shapes and sizes.

Its key organelles are;

- pills
- flagella
- ribosome
- cytoplasm
- mitochondria



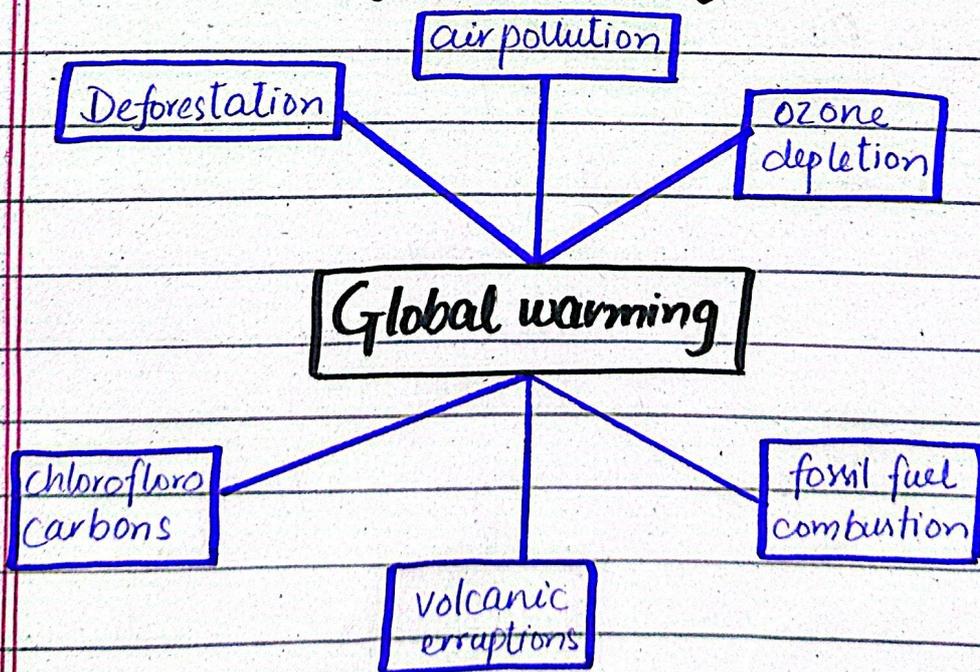
QNo: 3

## (a) Causes of global warming

### 1. What is global warming?

A man-made phenomena due to which the earth is witnessing a rise in its temperatures and undergoing climate changes due to human activities is known as global warming

### 2. Causes of global warming;



### (a) Deforestation;

Deforestation is playing a significant in global warming and rising temperatures of earth. Forests are the lungs of earth but due to various human activities and clearing of forest, the earth is running off its lungs.

### (b) Air pollution;

Air pollution has been intensified after the industrial revolution and dependency on fossil fuels. Air pollution and incorporation of harmful gases like  $\text{CO}_2$ ,  $\text{SO}_2$  and  $\text{NO}_x$  has majorly contributed in global warming.

### (c) Ozone depletion;

The ozone depletion is also contributing in global warming. The harmful rays from sun reaches earth and remain entrapped due to green house effect thus exacerbating global warming phenomena. The year 2025 has been marked as the most hottest year on earth.

#### (d) Chlorofluro carbons;

The emission of chlorofluro carbons through refregirators and air conditioners are raising the temperature of earth, contributing in global warming.

#### (e) Volcanic eruptions;

The thermal excretion and harmful gases released as a result of volcanic eruptions are contributing in raising the sustainable temperature of earth.

#### (f) Fossil fuel combustion;

The combustion of fossil fuels like coal, petroleum, crude oil, methane releases harmful gases into air and those gases contribute in global warming due to green house effect.

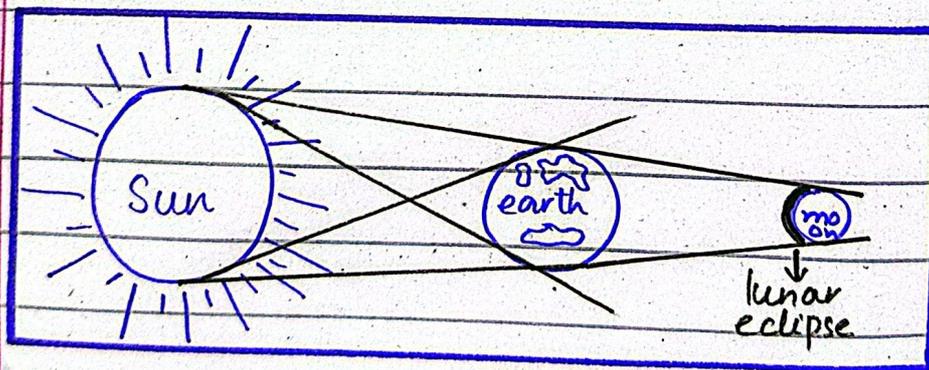
QNo:3

(b) Lunar and solar eclipse

(a) What is a lunar eclipse?

A lunar eclipse is an astronomical event in which sun, earth and moon aligns in such a way that earth sandwiches between sun and moon, casting its deep shadow on moon that makes it appear dark.

• Illustration of lunar eclipse



• Types of lunar eclipse;

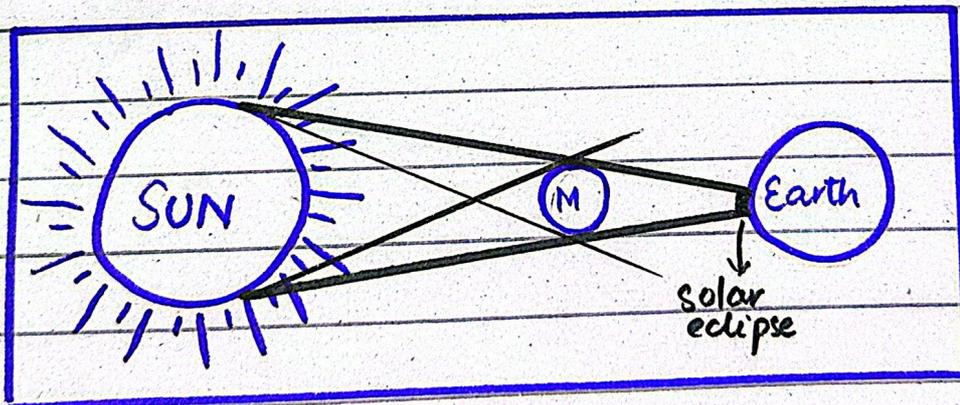
- Complete lunar eclipse
- Partial lunar eclipse

## (b) What is a solar eclipse?

A solar eclipse is a rare astronomical event in which sun, earth and moon aligns in such a way that moon sandwiches between earth and sun and the shadow of moon on earth blocks the sunlight making a night like situation in day.

A complete solar eclipse lasts for 30-40 minutes.

### • Illustration of solar eclipse;



### • Types of solar eclipse;

- Complete solar eclipse
- Partial solar eclipse

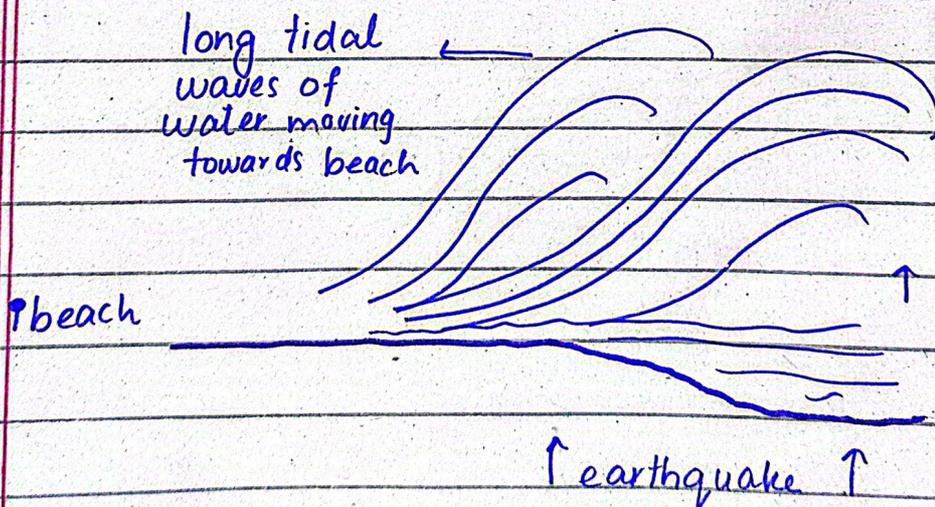
QNo: 3

(c) Tsunamis and cyclones

(1) What is a tsunami?

A tsunami is a natural disaster often triggered by earthquake in the oceans and seas. As a result of these earthquakes, huge waves are produced in oceans that travel toward beaches resulting in tsunamis.

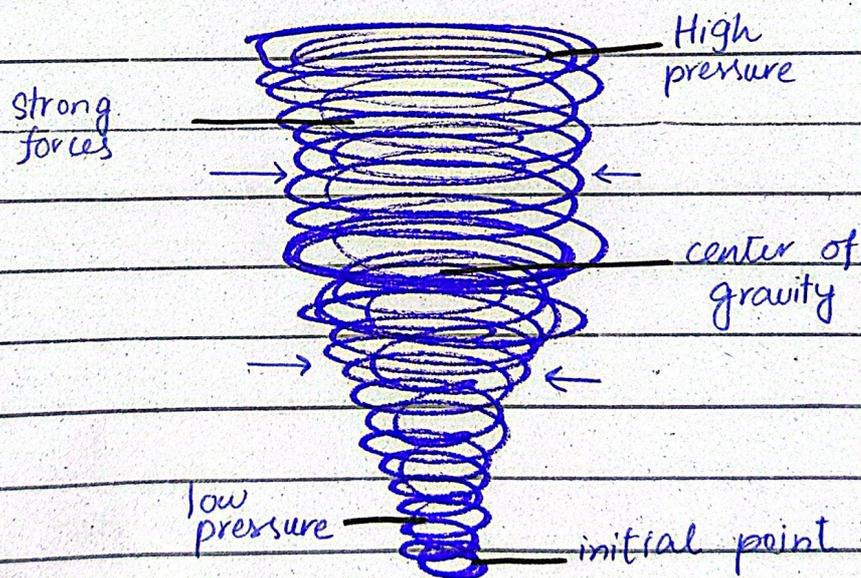
(2) Pictorial representation of tsunami.



### (3) What is a cyclone?

A cyclone is a huge windy storm that rotates in circular form and has great force of attraction. It is capable of destroying forests and infrastructural. It keeps on moving from one place to another place.

### (4) Pictorial representation of cyclones.



### (5) Types of cyclone;

- Polar cyclone
- Meso cyclone
- Thermal cyclone

QNo:3

## (d) Food preservation methods:

(1) What is food preservation?

Food preservation is a process by which food is artificially or naturally stored for a longer period of time and can be utilized when required without any contamination.

(2) Methods of food preservation:

There are various methods by which food can be preserved, the most famous are:-

- Refrigeration
- Using salt
- Drying
- Canning
- Preservatives
- Freezing

### (a) Refrigeration;

Refrigeration is a modern technique in which food is refrigerated and can be preserved upto 1 week.

### (b) Salt techniques;

Using salt to preserve food is an old technique in which the food is coated with salt and kept in air tight container. This is how food can be preserved for days.

### (c) Drying;

Drying is another technique to preserve food. It is a centuries old method in which meat was shallow fried and dried in air. After drying, the desired food is ready to be stored for months.

### (d) Canning;

Canning is the modern technique to preserve foods. The food is canned in an air tight can and can be preserved for months.

### (c) Preservatives;

Using preservatives is an artificial technique of preserving food. A few amount of preservatives is added in food e.g milk, juices, etc and they are ready to be stored for days.

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