

Question No. 1 (a)

Food Adulteration:

The intentional addition of a substance into food in order to increase its quantity and the extraction of several substances from the food or substitute it with other substances is called Food adulteration.

Health Risk:

They pose a health risk when the adulterant is toxic. Moreover, it also poses a risk to health when the essential nutrients are removed or substituted.

Example: water in milk and filler to spices.

Food Contamination:

The inadvertently presence of substances in food is called contamination.

→ They occur naturally or as a result of environmental activities.

harvesting; processing, packaging or transporting.

Examples:

It includes the presence of bacteria, viruses, chemical (pesticides) and physical objects (glass or metal fragments)

Controlling Measures Of Food

Adulteration:

Strict Policies:

The govt should implement strict policies to mitigate adulteration

Implementation Mechanism.

The government should develop implementation mechanisms by making teams to raid on shops or factories.

Awareness among public.

Awareness should be spreaded in people, not to buy adulterated substances.

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b Food Preservation:

It is a process of treating and handling food to stop or greatly slow down the spoilage of food.

Methods of food preservation:

Following are the methods used for the preservation of food.

① Freezing:

By freezing, the temperature of the food becomes low, which slows down the growth of bacteria, yeast and mold. Therefore, extending its shelf life.

Example:

Freezing preserves meat, seafood and frozen vegetables for months.

② Pickling:

In this the food is immersed in a solution of acid, usually vinegar or salt. It creates an environment that inhibits the growth of bacteria.

Example:

By applying salt on meat it can be stored for months.

③ Drying (Dehydration)

The moisture draw out in this process which inhibits the growth of bacteria & fungi.

Example:

powdered milk and instant coffee.

④ Canning:

To seal the food in the container, which create vacuum seal, preventing the growth of microorganism.

Example:

Prepared meal such as soup and beans in cans.

⑤

Radiations

In this process food is exposed to radiations like x-rays and gamma ray. These rays kill the microorganisms present in the food, which delay ripening of food.

Example:

Fresh fruit like mangoes are irradiated to delay ripening.

Weather:

Weather describes the conditions of the atmosphere for the short period of time like days, week or months.

Weather Variable:

There are different variable which describe and define the weather condition of an area. Some of them are.

① Temperature:

It describes how hot or cold the atmosphere is.

→ It can be below the

freezing point (0°C) or also

can be above the freezing point.

→ It is the most important

variable of the atmosphere because

other variables like pressure and

humidity depend on it.

② Pressure:

Atmospheric pressure is the force exerted by the weight of the air or the substance in any point on the earth.

→ Its significance is that

high pressure is often associated with

the calm weather while low

pressure brings storm and winds,

clouds and precipitation.

② Humidity:

It is the measure of present of water vapours in the atmosphere.

→ It results from the evaporation and transpiration of water. It is measured in g/cm³.

→ The amount of water vapour in a volume of air or atmosphere is called Absolute humidity.

→ The amount of water vapour present in air as compared to when the air is fully saturated is called Relative Humidity.

D

Earthquake:

A sudden release of energy in the form of seismic waves which set the earth crust in the vibration as a result of abrupt movement of

tectonic plates.

Causes:

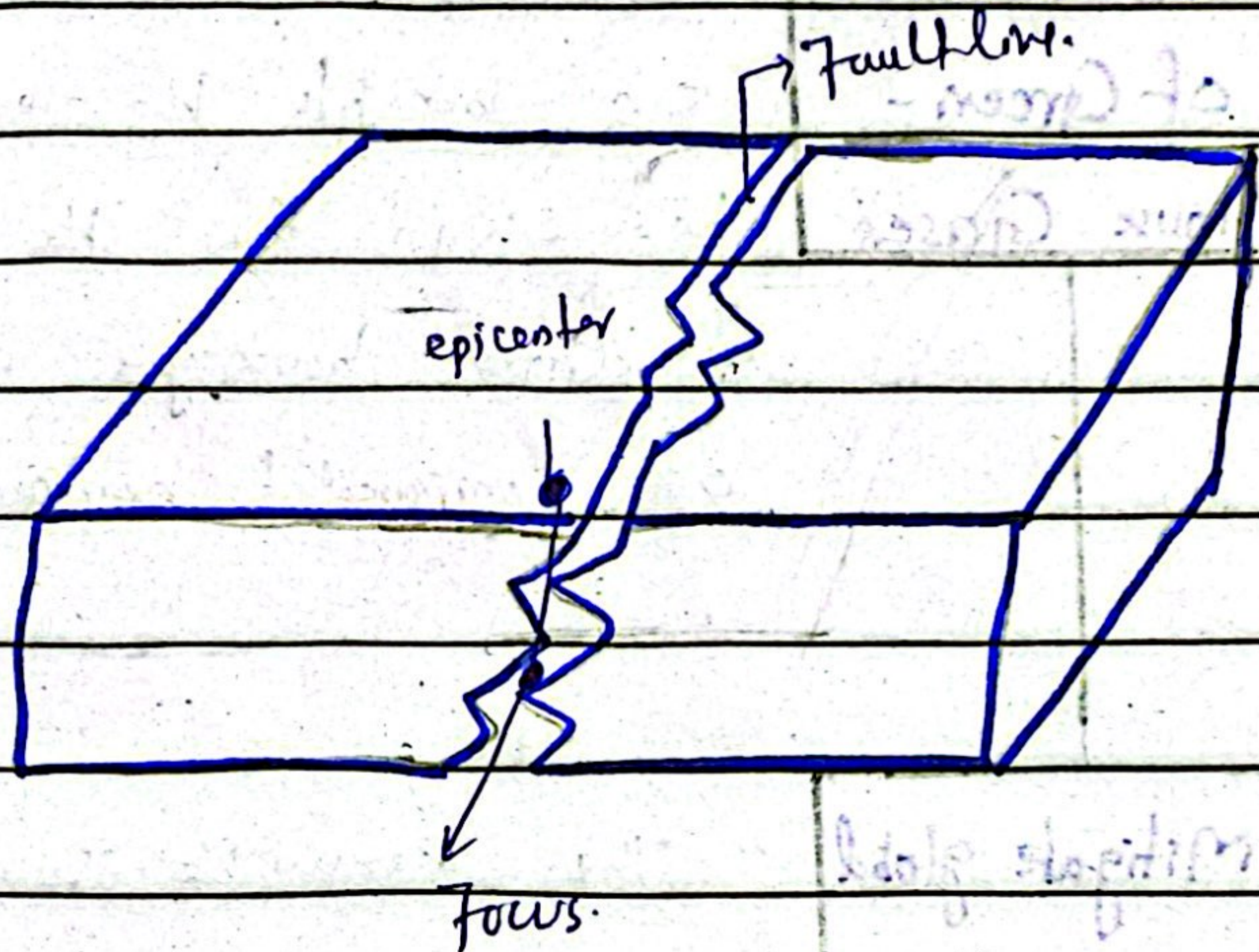
The main reason of earth to occur is the movement of plate tectonic. These plates have covered the entire earth surface. These plates are constantly in motion. In some region they rub against each other, in some region they sink beneath a plate and in some region they spread apart from each other.

The motion of these plates are not so much smooth. The plate may stick with the other plate, while rest of its body body. So, this develops a strain at that point. As the motion continues so a time comes, when the rock can not further withstand and it moves abruptly. This releases all of strain in the form of energy which cause earthquake to occur.

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- The earth quake can also occur due to volcanic eruption, heavy drilling and Nuclear experiments.



Question 2. (a)

Renewable Energy:

The energy obtained from those source that can replenish themselves over time and are considered inexhaustible.

Importance of Renewable resource to ~~Entire~~ Environment:

Following are the

importance of renewable sources to
the environment.

Reduction of Green- House Gases

→ The renewable resource
can benefit the environment
because in this the emission
of Green house gas is negligible
as compared to non-renewable.

Mitigate global warming

The Renewable source
can be used as a fuel
to mitigate global warming

(a) because it emits no green
house gases.

Minimize water pollution

The renewable sources can
also be used to minimize
water pollution, because the
shipment of it don't pollute water.
in case of non-renewable, the

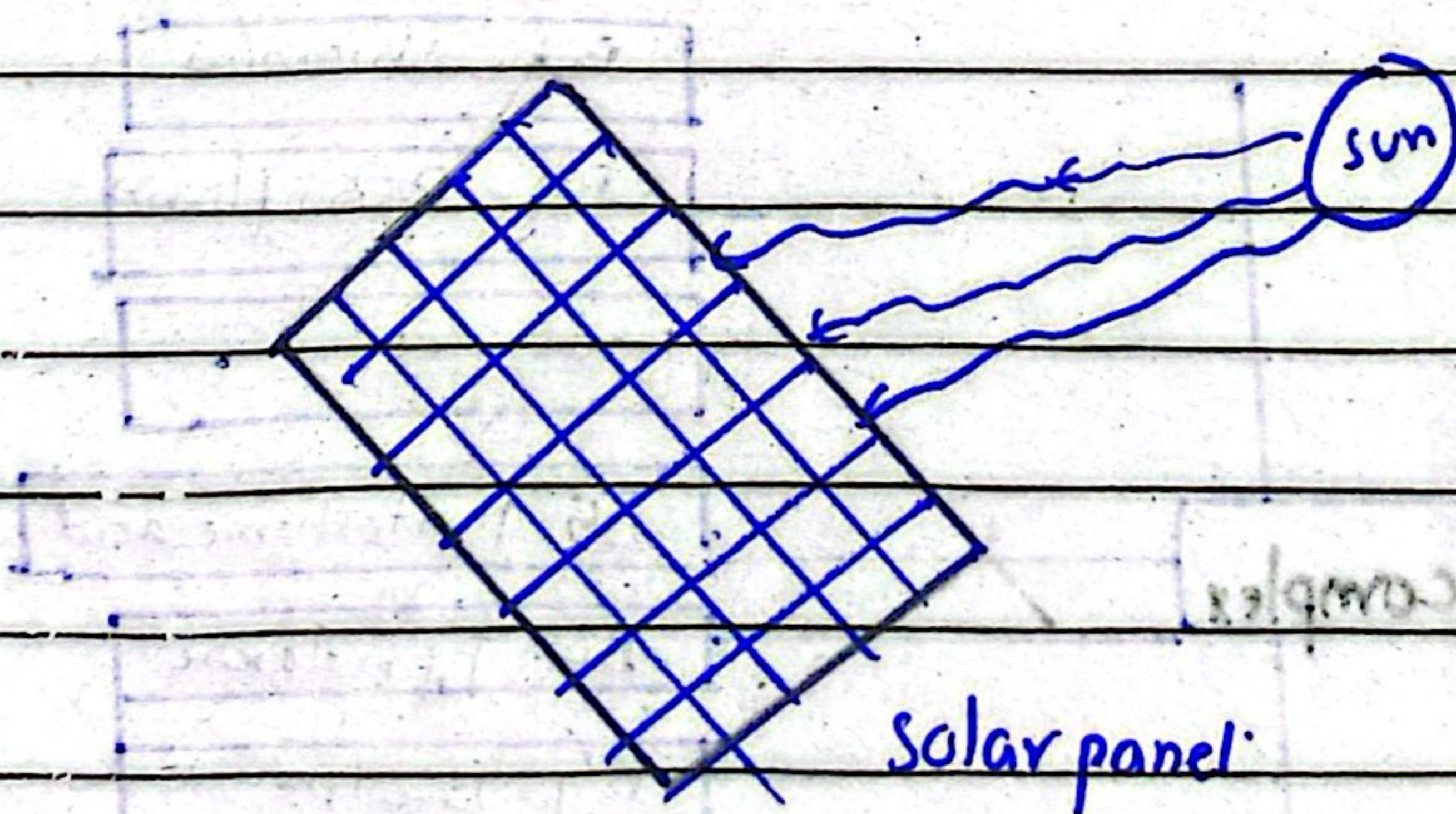
oil may go to water which
pollute it.

Solar Energy:

The energy derived from sun rays and is harnessed using technologies such as photovoltaic cell or solar panel.

Explanation:

When the sun rays fall on the solar panel it set free the electron from the atom which then produce electricity. It is a clean source of producing electricity.



(d)

color energy

Water Soluble Vitamin:

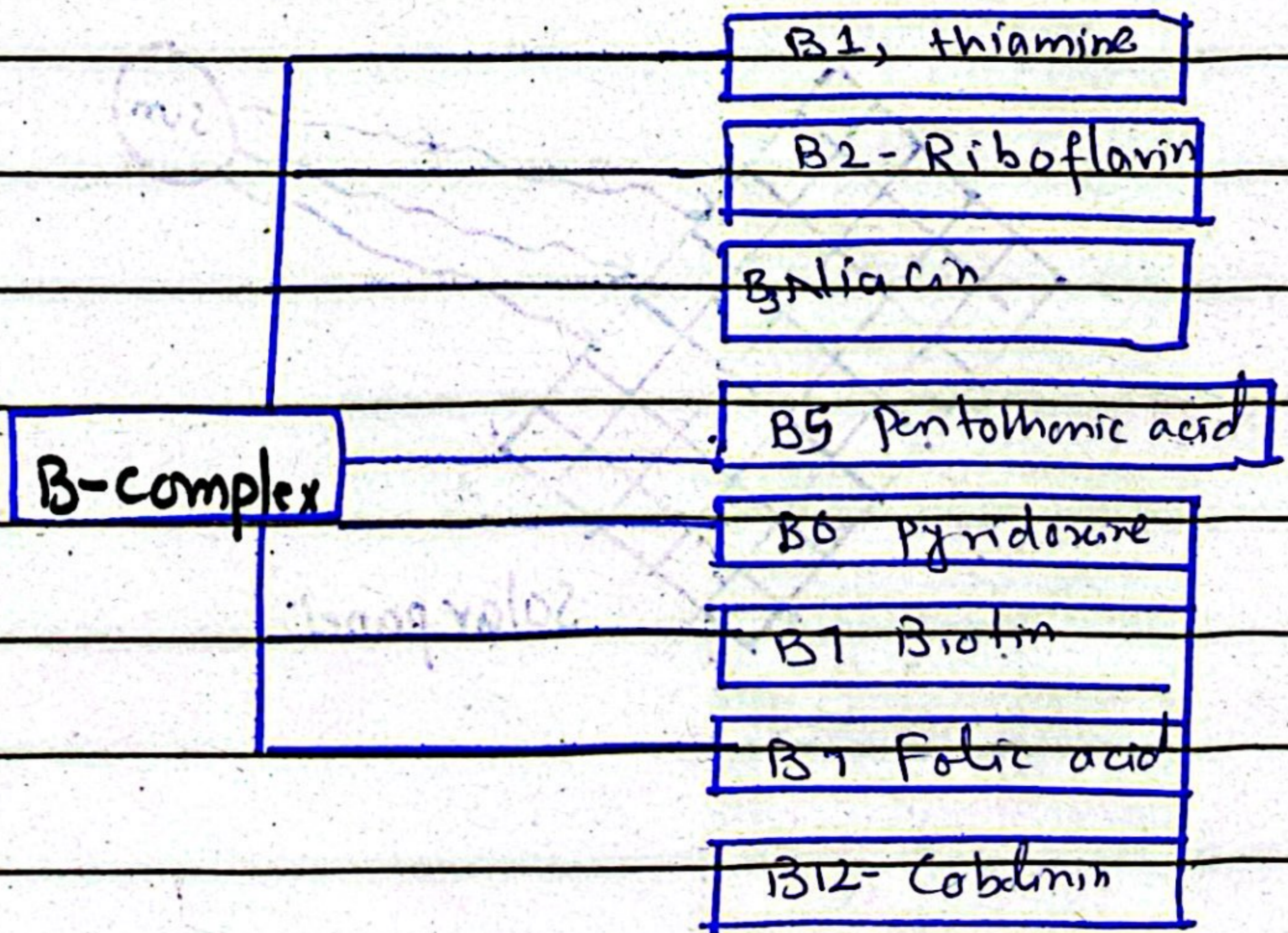
vitamin which can dissolve in water are called water soluble vitamin.

→ These vitamins are **vitamin B**

complex and vitamin C

B complex:

vitamin B complex include the following B vitamins.



Sources:

These can be obtained from meat, grains, legumes, vegetable, egg, fish etc.

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Function

They are essential for immune system, reproductive role, formation of red blood cells, nervous system and cellular respiration.

Deficiency:

These deficiency cause Beriberi, vitiligo, kidney stone, and loss of co-ordination.

Vitamin C:

They are also called Ascorbic Acid.

Function:

They play their role in collagen formation in teeth, bone and connective tissue of blood vessels.

Sources:

Orange, Lemon, green leafy vegetable and tomatoes.

Deficiency:

Scurvy (bleeding gums)

C

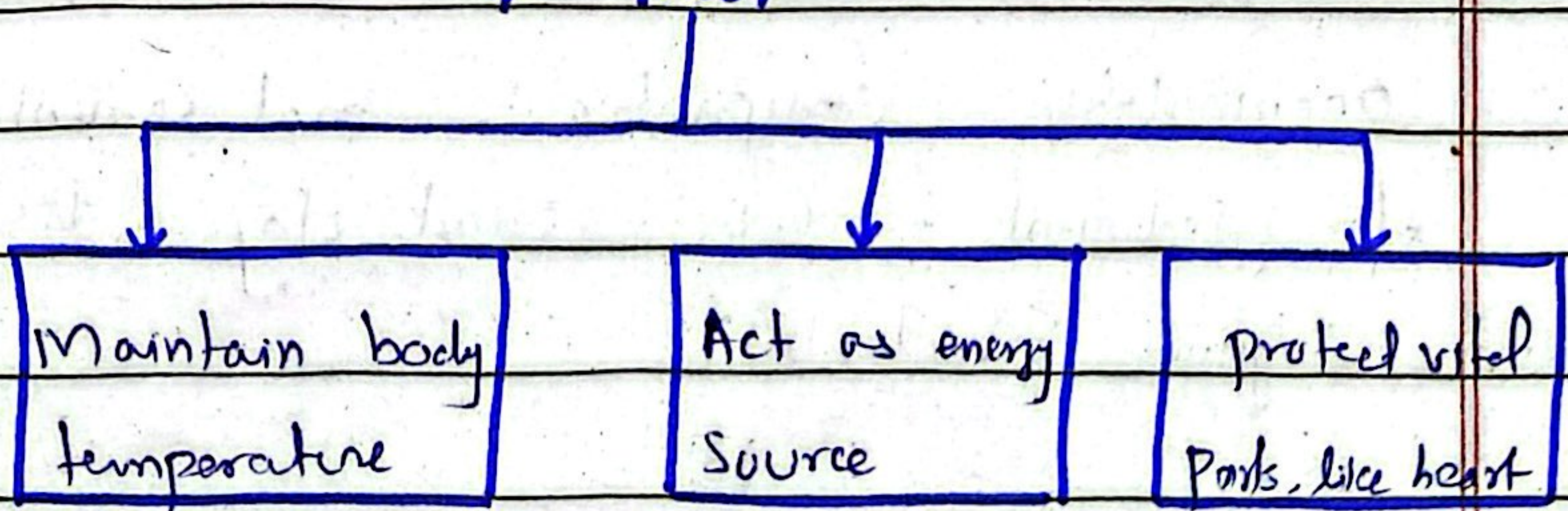
Saturated Fatsunsaturated Fats

- | | | |
|---|--|---|
| ① | It contains single bond between carbon atoms | contains one or more double bonds in their structure. |
| ② | They are solid at room temperature | They are liquid at room temperature |
| ③ | It can increase the cholesterol level in the body increasing heart attack chances. | It can improve the cholesterol level and support heart health. |
| ④ | It can be obtained from animal products such as meat, butter and cheese. | It can be obtained from plant oils (olive, sunflower) and fatty fish. |

Function of Fat:

The following are the functions of fats.

Function of Fat



B

Rocks:

Rock is any coherent naturally occurring solid material consisting of one or more minerals. They form the earth's crust.

Types of Rocks:

① Igneous Rocks:

They form from the cooling and hardening of magma or lava.

Example.

Granite, Basalt

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② Sedimentary Rocks

Formed from the accumulation, compaction and cementation of sediments like sand, clay, and organic materials.

Example:

Sandstone, Limestone.

③ Metamorphic Rocks

It formed when the existing rocks are transformed by heat, pressure or chemical process.

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Rock cycle: Transition to Igneous:

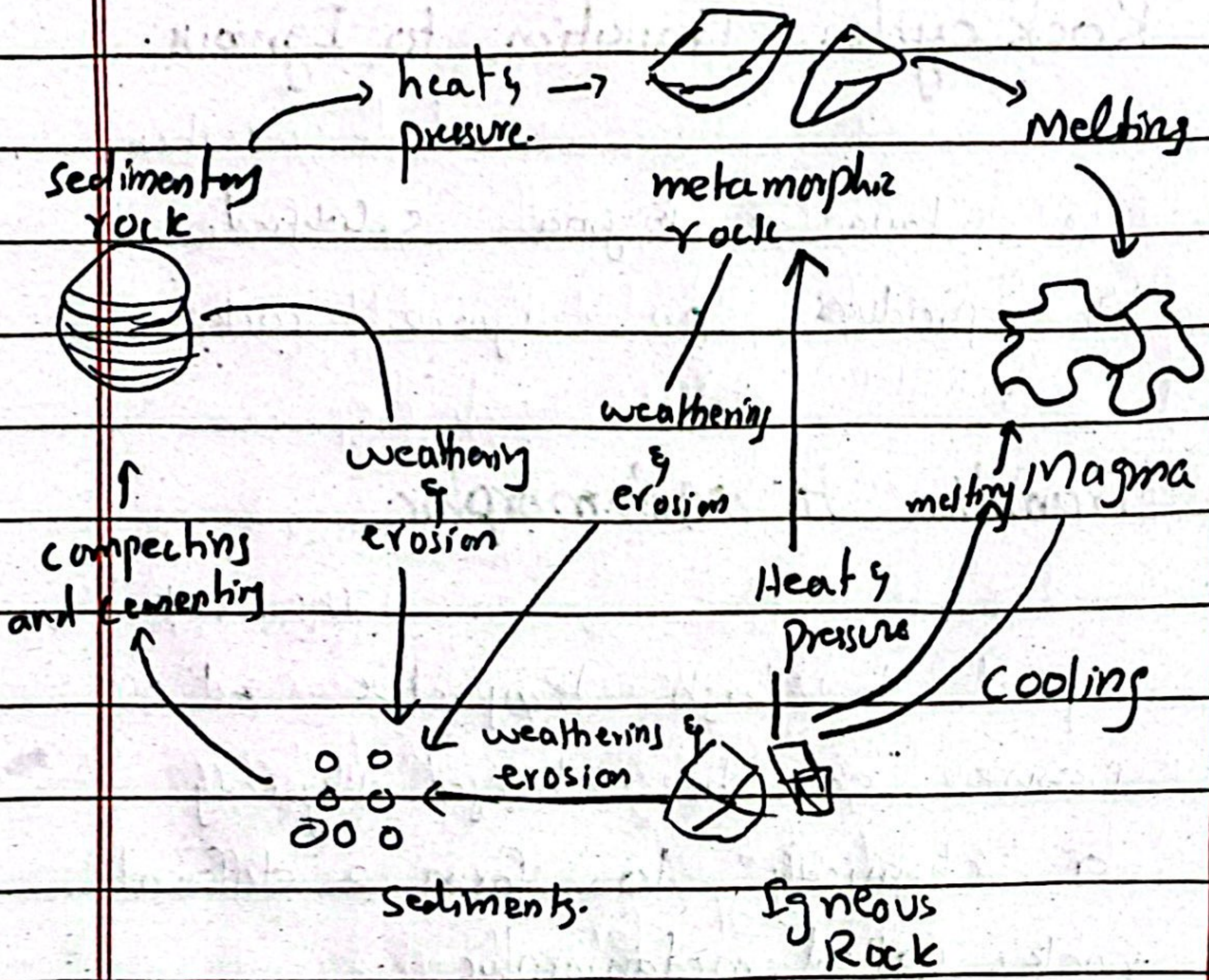
When the lava or magma solidified it produces an igneous rock.

Transition to Metamorphic:

The rock exposed to high temperature and pressure can be changed physically or chemically to form a different rock, called metamorphic.

Transition to sedimentary:

Rocks exposed to the atmosphere are very unstable and subject to the processes of weathering and erosion when it break down into smaller fragment and carries away dissolved materials. Sedimentary rock form from deposits that accumulate on Earth's surface.



Rock Cycle