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Test: GSA

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## Question 2 (A)

### Renewable Energy Resources:

"The energy resources which does not produce the green house gases and their replenishing power is high are called renewable energy resources."

### Importance of Renewable Energy Resources:

The main advantage of renewable energy resources are their less impact on environment. Some of the advantages of renewable energy resources are.

#### • Less Green House Gas Emissions:

The prime advantage of renewable resources are that they emit less green house gas emissions like  $CO_2$ ,  $CH_4$  and  $NO_x$ . These gases are very harmful for the health.

#### • Low Enhanced Green House Effect:

Renewable energy resources create low enhanced green house effect. This maintains the life cycle of earth by not rising its temperature.

#### • Limit the Global Warming:

Global warming is the gradual increase in the average temperature of earth. Due to global warming, life becomes impossible on earth. But renewable energy resources limit the global warming.

## • Restoring Ozone Layer Depletion:

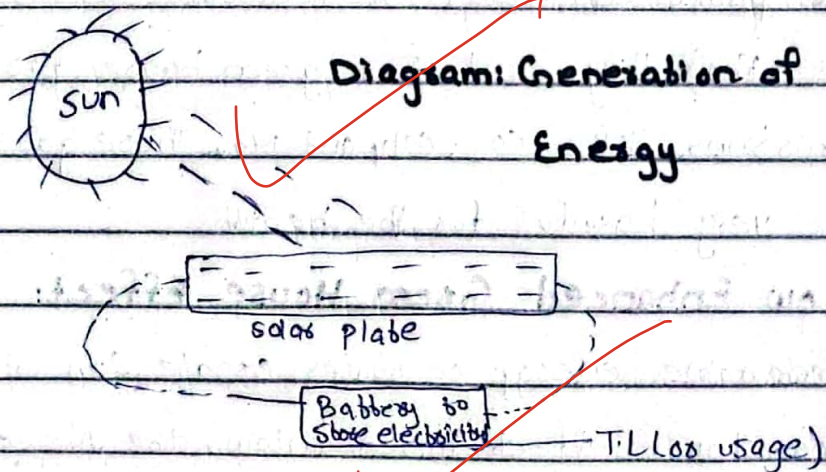
Ozone layer is essential to stop the harmful radiations coming to earth. But green house gases deplete the ozone layer. This depletion can be overcome by using the renewable energy resources.

## Solar Energy:

The energy that is obtained from the rays of sun is called solar energy.

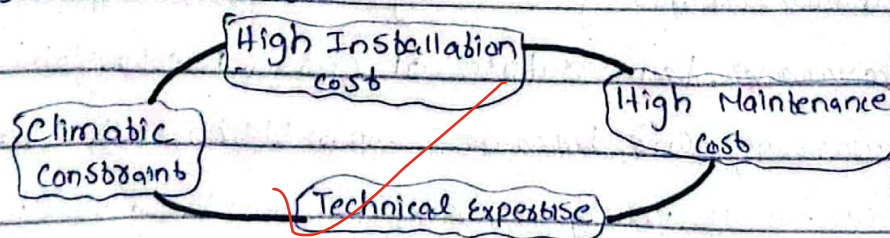
## Process of Solar Energy:

Sunlight falls on the cells of solar plate, then the electrons in the cells are free to move. These free electrons conduct the electricity.



## Limitations to Renewable Energy Resources:

These are some limitations to renewable energy resources which are:



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## Question # 2 (B)

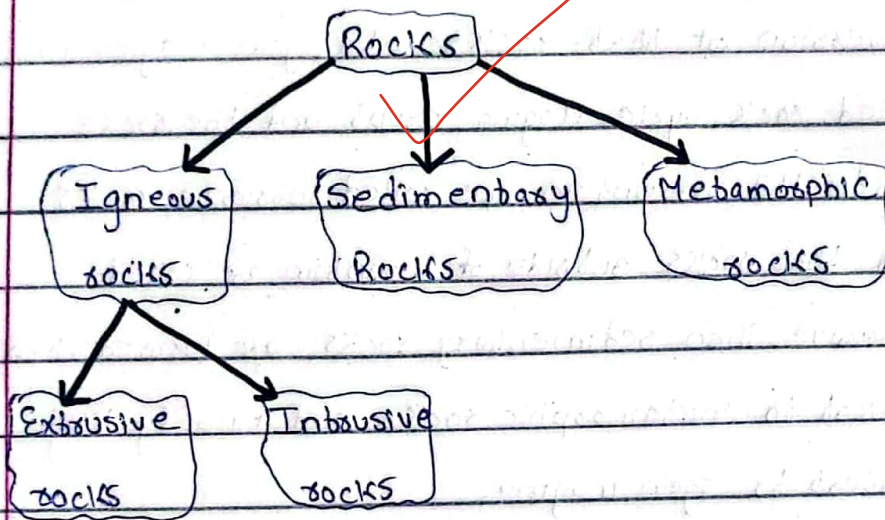
### Rocks:

"Rocks are the hard solid material found inside and outside the earth crust"

### Types of Rocks:

There are basically three types of rocks.

These



### Igneous Rock:

"Rocks that are formed from the fire"

Igneous rocks further have two types.

**Intrusive rocks:** Rocks that are inside the mountain.

**Extrusive rocks:** Rocks that are outside the mountain.

### Sedimentary Rocks:

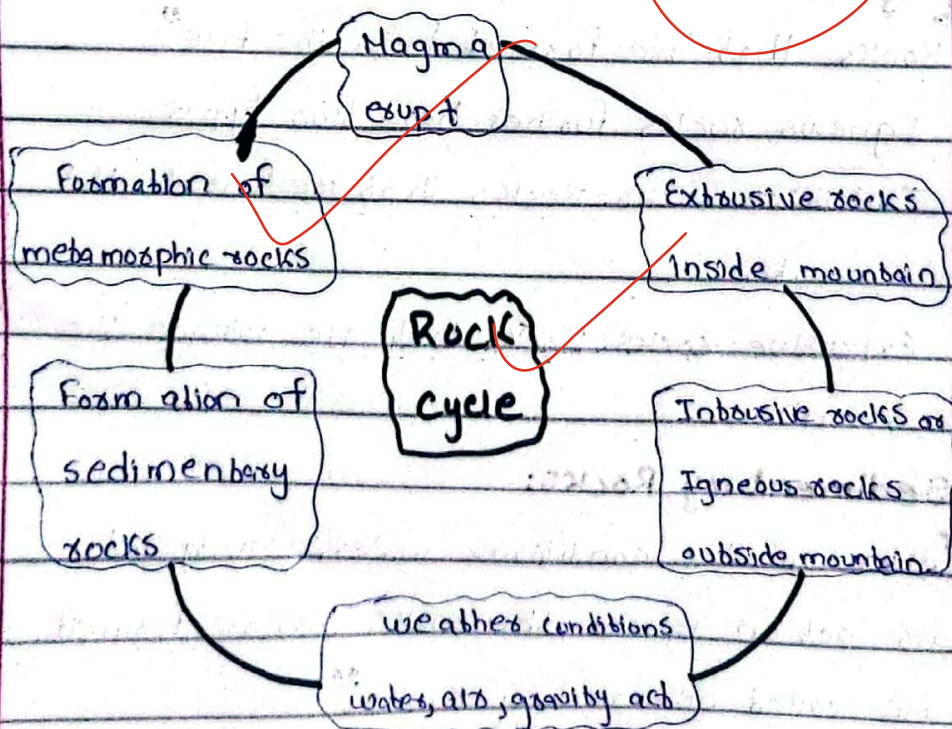
"When weather conditions, water, gravity, and air act on igneous, the rocks that are formed are called sedimentary rocks."

## Metamorphic rocks:

The pressure on the sedimentary rocks increases due to the upper layers of rocks. As a result, sedimentary rocks change their shape and rocks that are formed are called metamorphic rocks.

## Rock cycle:

The formation of rocks from magma and the conversion of that rocks into again magma is called rock cycle. Magma erupts and the rocks inside the mountain are called intrusive rocks and the rocks outside of mountain are called extrusive. Then sedimentary rocks are formed which convert to metamorphic rocks and finally they convert to again magma.





## Question # 2 (c)

### Fats:

Fats are lipids that have multiple function in the body. They store energy and contain the compounds like carbon, hydrogen.

### Fundamental Elements of Fats:

The fundamental elements of fat is the fatty acid.

### Saturated fats:

The fats which are solid at the room temperature are called Saturated fats.

Example:

- Meat

### Unsaturated fats:

The fats which are liquid at the room temperature are called unsaturated fats.

Example:

- Juices

### Importance of Fats:

Fats play a vital role in the body. Fats are basically the lipids which contain cholesterol. The importance of fats are:

#### • Essential for Metabolism:

Every cell in the body requires fats on its outer layer to survive. The cells play a vital

role in the metabolism.

### • Regulating the reactions:

These are multiple reactions taking place in the body every time. Fats are essential for them to continuously regulate the reactions.

### • Removes Excessive Fat from body:

Some fats remove the excessive fat from the body which disrupts the functioning of the body.

### • Normalizes blood flow:

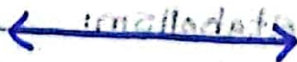
Excessive fat build on the arteries, which restricts the blood flow. The high density lipoprotein, which is actually a fat, removes the excessive fat and normalizes the blood flow.

### • Prevent the heart attack:

When excessive fat is removed from the body by high density lipoprotein, the blood reaches the heart easily and the heart performs its function easily, which prevents the heart attack.

### • Save from brain haemage:

The brain works on the blood flow. If the blood does not reach it, then it stops working. So, fats prevent from the brain haemage.



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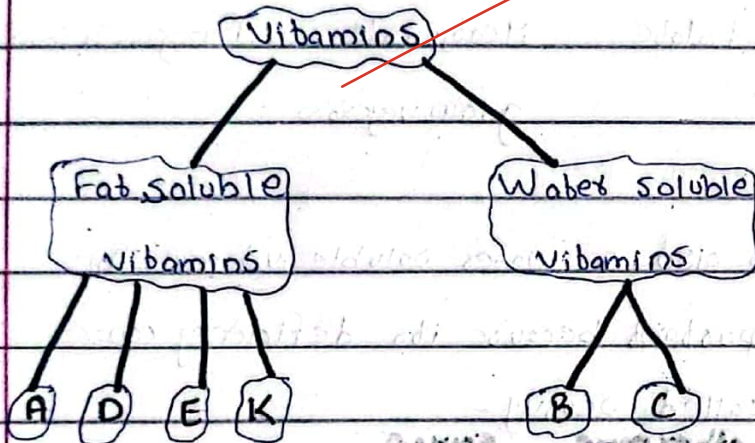
## QUESTION # 2 (D)

### Vitamins:

"Vitamins are organic compound in the body which are essential for multiple functions in the body."

### Classification of vitamins:

Vitamins are classified into two types on the basis of fat soluble and water soluble-



### Water Soluble Vitamins:

"The vitamins which are soluble in water are called water soluble vitamins"

### Vitamin B:

Vitamin B is a water soluble which have further types from vitamin B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, B<sub>5</sub>, B<sub>6</sub>, B<sub>7</sub>, B<sub>9</sub>, B<sub>12</sub>. These are essential for preventing body from multiple diseases and their deficiency caused some problems.

Vitamin	other name	source	deficiency
Vitamin B <sub>1</sub>	Thiamine	Peas, beans	beriberi

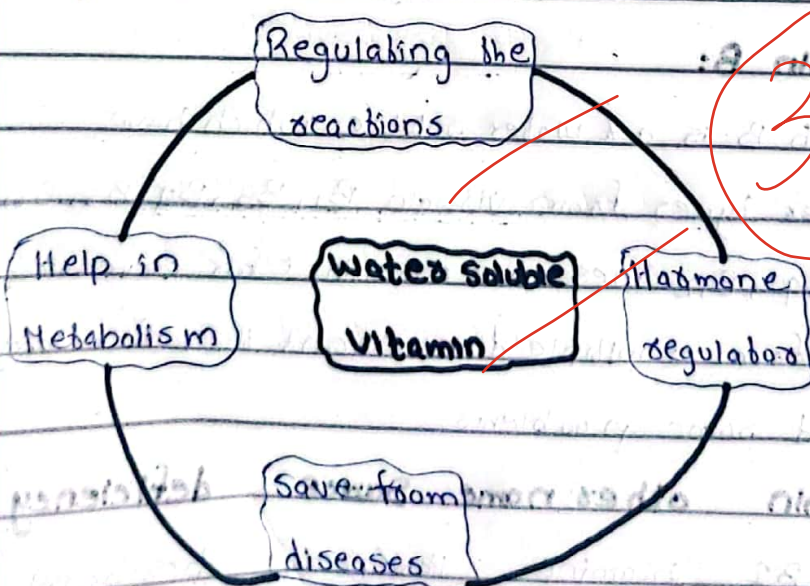
Vitamin B2	Riboflavin	Milk, eggs	Crack at the Pallagata
			Coarsness of mouth
Vitamin B3	Pyridoxine	Meat, fish	Pallagata
Vitamin B5	Panobthemic acid	Milk, vegetables	Fatigue
Vitamin B6	Niacin	Meat, fish	Insomnia
Vitamin B7	Bio	Leafy green vegetables	Hair loss
Vitamin B9	Folate	Meat, whole grain vegetables	Fatigue, Insomnia

### Vitamin C:

Vitamin C is also a water soluble vitamin. This is very important because its deficiency cause a disease called scurvy.

Vitamin	other name Source	Source Other name	deficiency
Vitamin C	Ascorbic acid	cherries	Scurvy

### Importance:





### QUESTION # 3 (A)

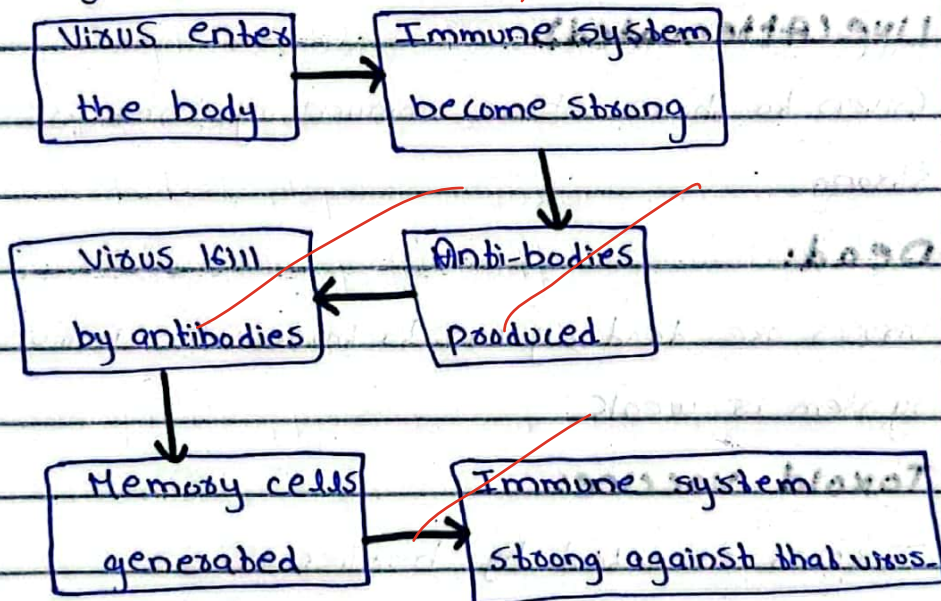
#### Vaccinization:

"The process of building resistance in the human body against the specific disease/virus or infection is called Vaccinization or immunization"

This process carried out through 'Vaccines'.

#### Working of vaccine:

Vaccine enters the body and make the immune system strong, cells generated which kill the viruses, memory cells generated, immune system strong against that virus.



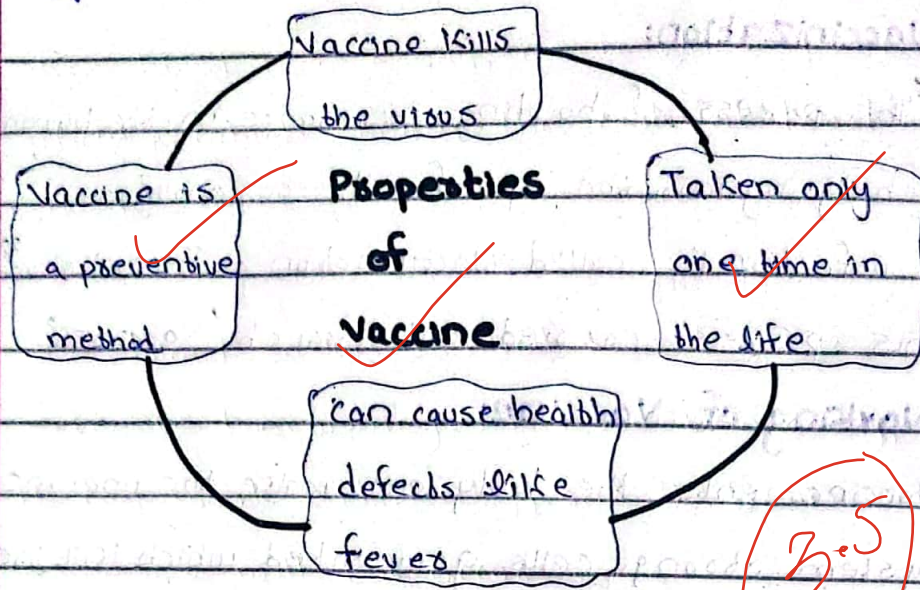
#### Delivery of vaccine:

In recent era, vaccine are delivered orally.

#### First vaccine:

In 1885, Louis Pasteur produced the first vaccine against the rabies.

## Properties of vaccine:



## Types of vaccine:

There are different types of vaccine.

### Live (Attenuated):

Given to those whose immune systems are strong.

### Dead:

Viruses are dead, given to those whose immune system is weak.

### Toxoid vaccine:

Toxins secreted by bacteria.

### Conjugate vaccine:

It is a vaccine which has combination of proteins and bacteria.





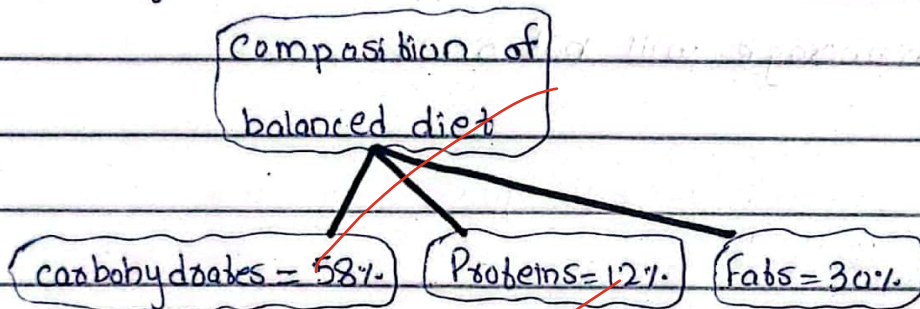
### Question # 3 (B)

#### Balanced diet:

"A diet which has all the essential nutrients in it in a proper proportion is called the balanced diet."

#### Composition of Balanced diet:

The composition of balanced diet is the following.



#### Merits of balanced diet:

Balanced diet plays an important role in the normal functioning of body.

##### • Helps in Metabolism:

Carbohydrates, proteins, and fats help in the metabolism.

##### • Digestion of Food:

The food can be digested effectively when all components are in balanced diet.

##### • Builds Resistance against diseases:

These diets help in building the resistance against the diseases.

## Prevent the risk of heart attack:

when blood flow easily, the heart can pump efficiently, which lowers the risk of heart attack.

## Saved from Brain Hemorrhage:

The blood requires blood flow for the effective functioning. If blood flow easily, it can work efficiently, and the brain hemorrhage will not occur.



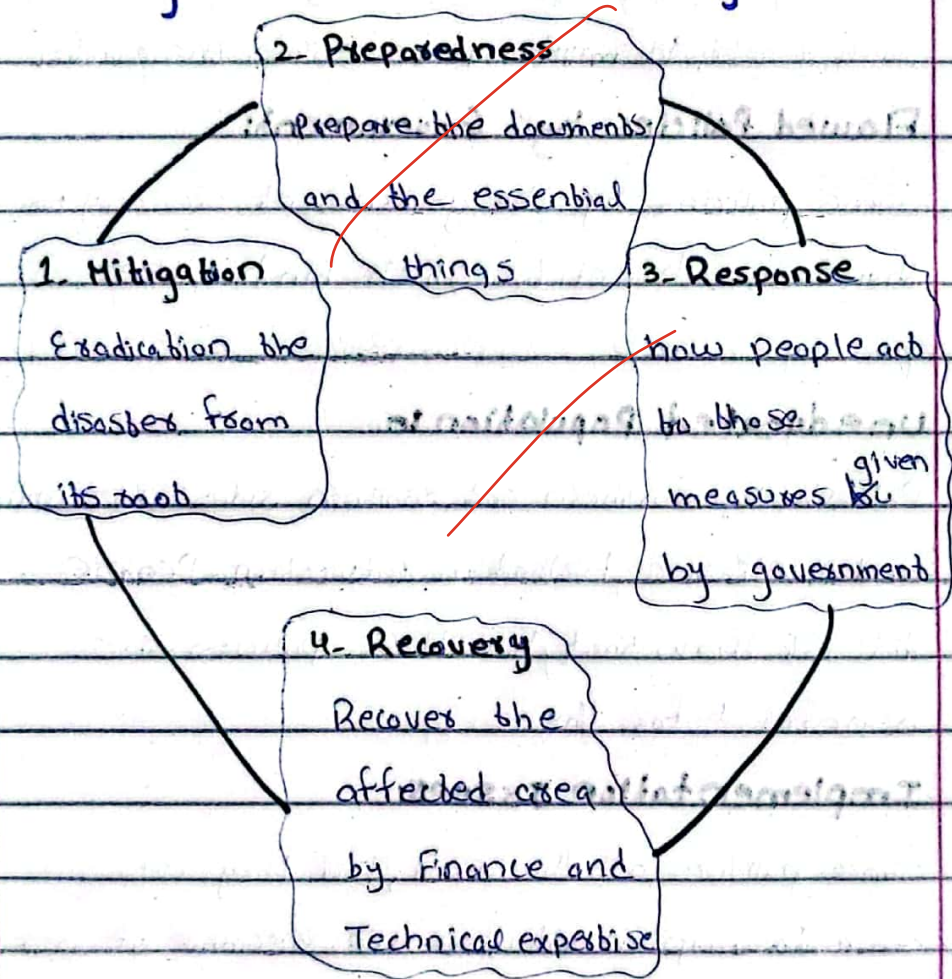


### Question # 3 (c)

#### Disaster Risk Management (DRM):

"Disaster risk management is the process to tackle the disaster effectively and limit the damage caused due to the prevalent disasters"

#### Working of Disaster Risk Management:



#### Weaknesses in Pakistan DRM:

Pakistan faced several floods and their impacts are huge. This is due to the weaknesses in the DRM. These are

## Corruption in the Fund:

Pakistan ranks 133<sup>rd</sup> in the corruption perception index which indicates that there is high level of corruption in Pakistan.

## Brain drain:

Pakistan's Technical experts & left the country. According to Ministry of Overseas, In last decade, 10 million people left the country.

## Flawed Policies by Government:

Some policies by the government are only for their own benefit, which hinder the process.

## Uneducated Population in

Pakistan's Northern and Southern sides like Sindh and KPK are behind in education. People did not know that how these policies are beneficial for them.

## Implementation Issues:

Some policies are on the end, but they never come to implementation side. Because of this disaster risk management is not so efficient in Pakistan.

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### QUESTION # 3 (D)

#### Carbohydrate:

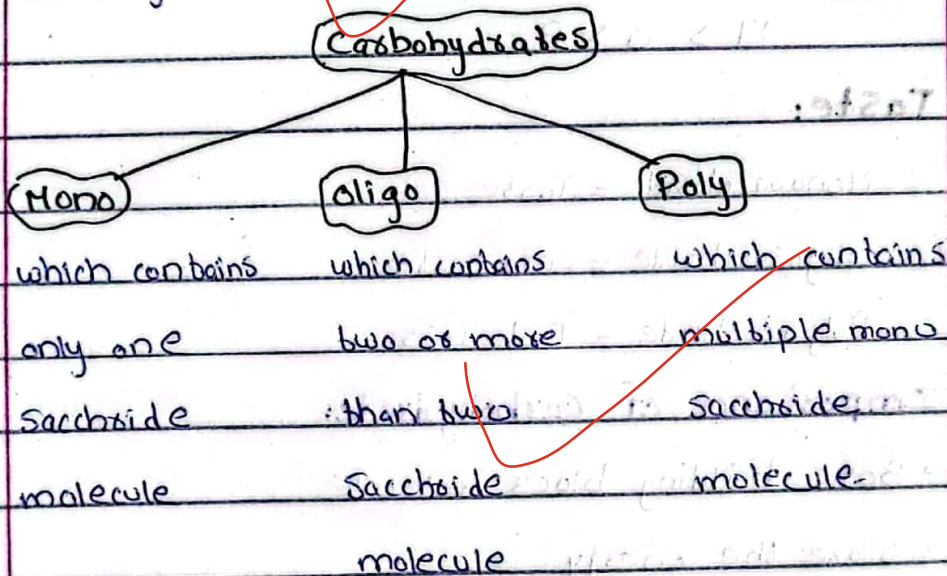
"The word carbohydrate means the compounds of hydrated carbon."

#### Formula:

$$\text{Formula} = C_x(H_2O)_y$$

#### Classification of Carbohydrates:

Carbohydrates are classified into three types.



Example:

- Glucose
- Fructose

Example:

- Sucrose

Example:

- Poly-peptide

#### Properties of Carbohydrates:

There are several properties associated to carbohydrates.

##### • Complexity:

Complexity increases from mono to poly Saccharide.

$M \lesssim O \lesssim P$

### Strength/breaks:

The hardness increases from Mono to poly saccharide

$M < O < P$

### Solubility:

The solubility decreases from Mono to poly saccharide

$M > O > P$

### Taste:

Mono saccharide = Taste

oligo saccharide = less taste

Poly saccharide = Tasteless

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### Importance of Carbohydrate:

- Basic building block molecule
- Store the energy
- Basic source of energy

### Fundamental Element:

The fundamental element of carbohydrates is the 'saccharide'

