

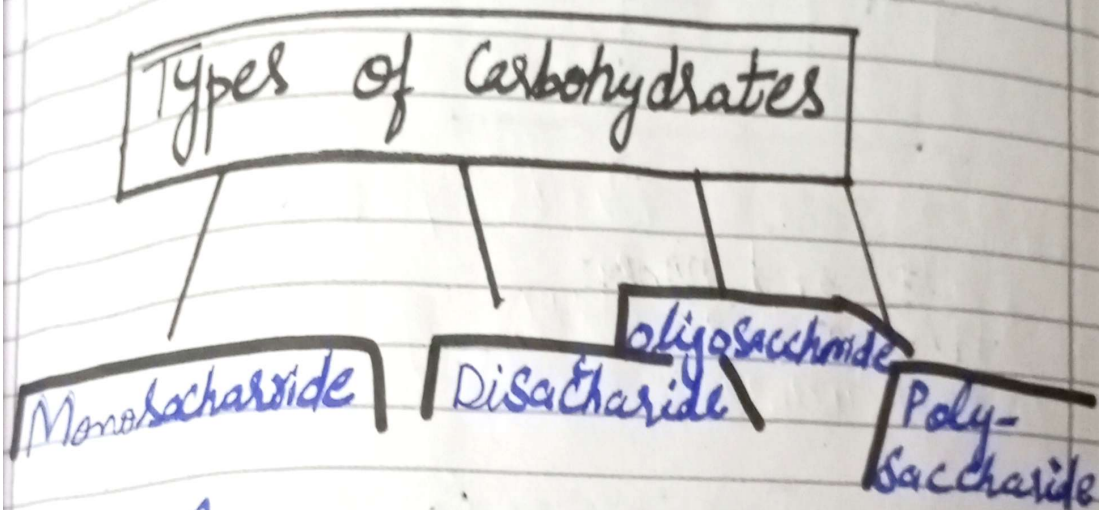
Q) What are carbohydrates?
 classify and give example?

Carbohydrates:

Carbohydrates are arose from two words Carbon and hydrates

Its literally mean hydrates of carbon

Carbohydrates are classify in to 4 sub classes



Mono-saccharides:

Mono mean "One"
 Saccharides derived from Greek word
 Sakkaron means "Sugar"

Carbon atoms vary from 3 to 7

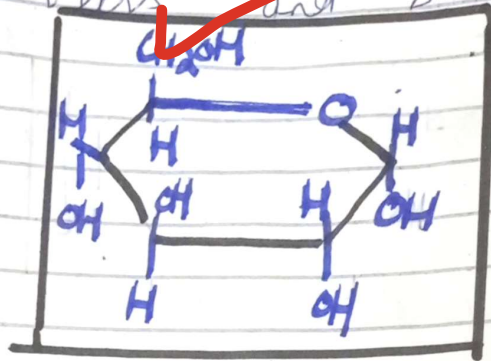
$3H_2O_6$	Trioses	Glycerak-hyde	$6H_{12}O_6$	Hexoses	Glucose
$4H_8O_4$	Tetroses	Erythrose	$7H_{14}O_7$	Heptoses	Gluko-heptoses
$5H_{10}O_5$	Pentoses	Ribose			

Examples of Monosaccharides

1) Glucose: It is an instant source of energy

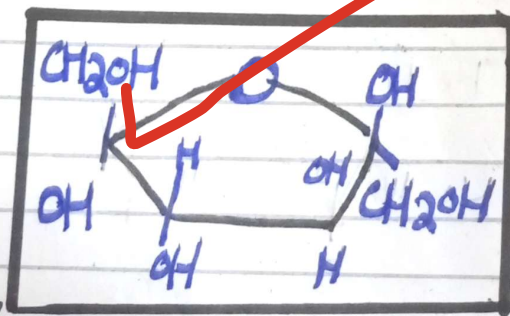
2) Formula $C_6H_{12}O_6$

Colourless and sweet in taste



2) Fructose: It is present in fruits and honey.
It combines with glucose to form sucrose.

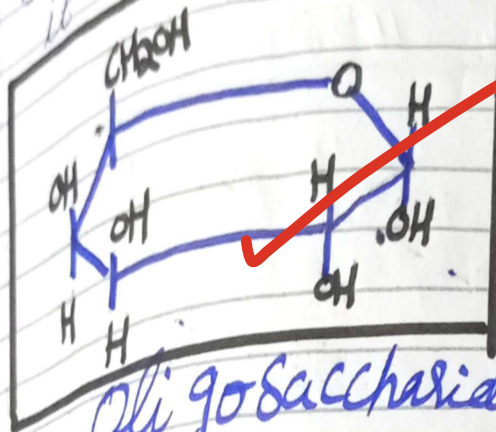
Glucose + Fructose = Sucrose



Fructose
Structure

Its structure is both in ring and circle form. However, furanose structure is present in it.

3) Galactose: Milk sugar.
It is structurally same as glucose.
but in 4th ring chain of being
it become epimer of glucose.



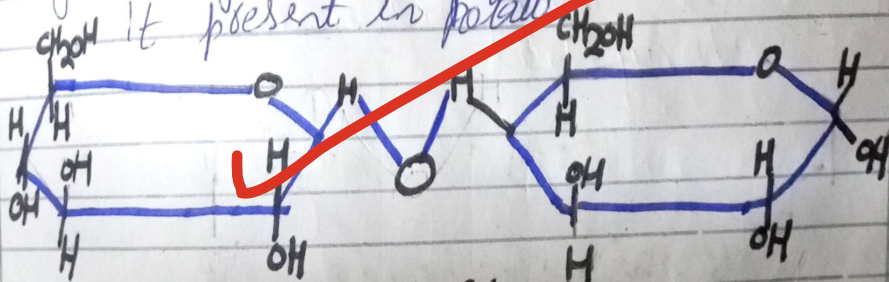
Oligosaccharide

- It is form of carbohydrates.
- 2 mono saccharide joint to form oligo saccharide.
- Made up to 2-10 molecules of mono saccharides.

Example

Maltose
Sucrose
Lactose

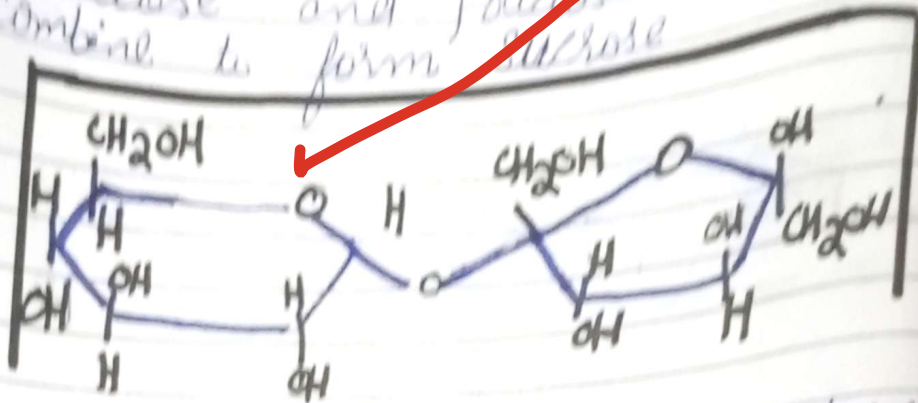
1- Maltose: Two glucose molecules joint together to form maltose.
It present in potato.



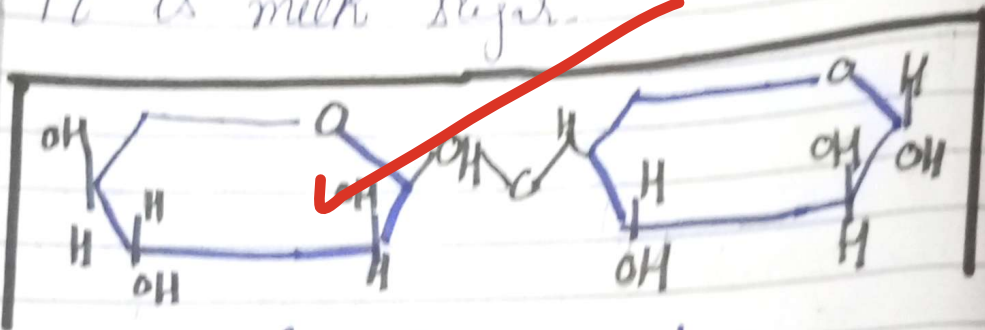
Maltose

Sucrose is called as a Table sugar. It help in smoothing of food.

Glucose and fructose molecule combine to form sucrose.



Lactose: Glucose and galactose combine to form lactose. It is milk sugar.



Poly Saccharides

It contains more than 10 molecules of carbohydrates.

Poly saccharide

Homopolysaccharide
 [Pectin
 cellulose]

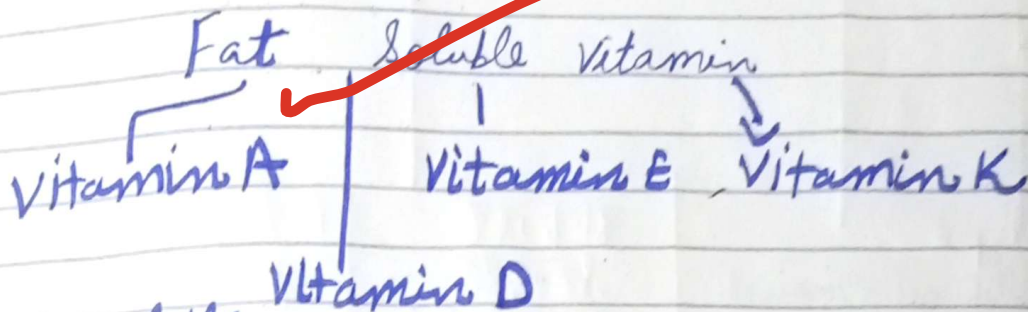
Heteropolysaccharide
 [Heparin
 Hyaluronic acid
 Keratin]

8) Describe deficiency vitamins?

the source, uses and symptoms of Fat Soluble

Fat Soluble vitamins:

The vitamins which are soluble in fats are called fat-soluble vitamin



Fat-soluble
Vitamin:

Vitamin	Source	Uses	Deficiency
Vitamin A	Carrot, Spinach, green vegetables, egg, meat	^① Synthesis of Rhodopsin Help in a lining of epithelial tissues Strengthening skeleton system	AKA Retinol ① Nyctalopia ② Xerophthalmia ③ Conjunctiva ④ Keratomalacia ⑤
Vitamin E	Milk, egg, Safflower oil, Sunflower oil	Anti-aging Anti-sterility Sterility	Toco-phenol ① deficiency in fertility ② Anemia ③ ④ Hemolysis

Vitamin

Source

Uses

D

$D_1 =$

Ergo-
califerol

$D_2 =$
chole-
calciferol

Sunlight, vegetables,
green, meat,
liver oil,
cod-liver oil

Anti-sickness
Strengthening of
bone.

Growth and
development of
bones

K

$K_1 =$

Phenylquinone

$K_2 =$

menequinone

richest
source
spinach,
vegetables,
milk, egg,
meat

Anti uses to
prevent bleed-
ing
uses to prevent
hemorrhage

deficiency

Rickets in children.
Osteomalacia in Adults.

vitamin K deficiency

① deficiency in blood clotting

② Hemorrhage disorders

3.5