

Date-09/06/2021

B-sc-II, Zool(Sub)

Carbohydrate. (2nd PDF)

(2) OLIGOSACCHARIDE CARBOHYDRATES:— These Carbohydrates are made by Condensation of 2-10 sugar molecules. on the basis of no of sugar molecules these Carbohydrates are further divided into following groups:—

(A) DISACCHARIDE CARBOHYDRATES:— These Carbohydrates are made by Condensation of two similar or dissimilar sugars and by emission of water molecule. The general formula of disaccharide Carbohydrates is  $C_6H_{12}O_6 + C_6H_{12}O_6 - H_2O = C_{12}H_{22}O_{11}$ . The two sugar molecules are connected with fourth carbon of other sugar then such type of linkage is called 1-4-linkage, similarly 1-6 linkage and some other linkage are also found in disaccharide Carbohydrates. Some important disaccharide Carbohydrates are as follows:—

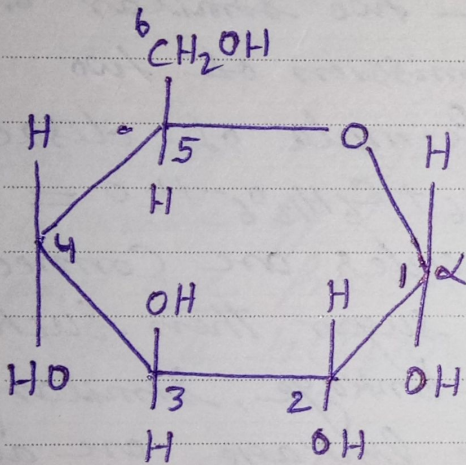
(1) SUCROSE (CANE SUGAR):— it is found in sugarcane and made by Condensation of one glucose and one fructose molecules.

(2) MALTOSE (MALT SUGAR):— it is found in malted grains of barley and made by Condensation of two glucose molecules.

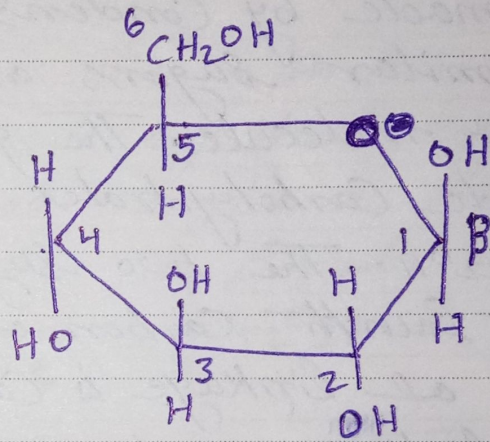
(3) LACTOSE (MILK SUGAR):— it is found in milk and made by Condensation of one glucose and one galactose molecules.

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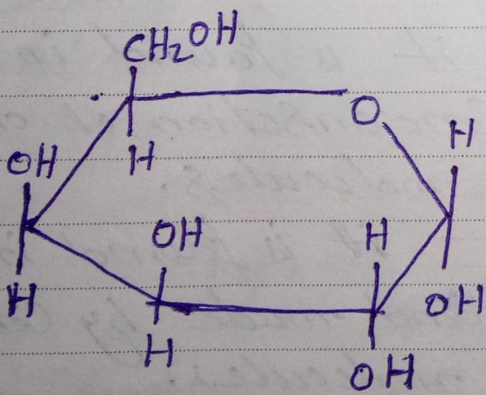
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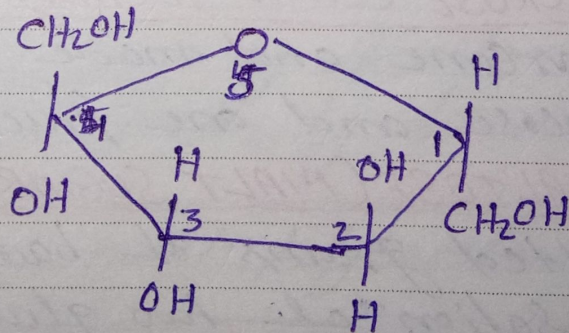
$\alpha$  D = Glucose



$\beta$  D = Glucose



D = Galactose



D = Fructose

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(B) TRISACCHARIDE CARBOHYDRATES: — In these Carbo-  
-hydrates 3 Sugars are present e.g.:- Raffinose: —  
it is found in Cotton seed and made by Condens-  
-ation of one glucose, one galactose and one  
fructose molecules. The formula of raffinose  
is  $3(C_6H_{12}O_6) - 2H_2O = C_{18}H_{32}O_{18}$

(C) TETRASACCHARIDE CARBOHYDRATE: — In these Carbo-  
-hydrates 4 Sugars are present e.g. Stachyose: — it  
is made by Condensation of one glucose, two galactose  
and one fructose molecules. The formula of stachy-  
-ose is  $4(C_6H_{12}O_6) - 3H_2O = C_{24}H_{42}O_{21}$

(3) POLYSACCHARIDE CARBOHYDRATES: — These Carbohydrates  
are made by Condensation of more than 10 Sugar  
molecules hence these are the most Complex  
Carbohydrates. on the basis of types of Sugar  
molecules it further divided into two groups.

(i) HOMOSACCHARIDE: — made by similar Sugars.

(ii) HETEROSACCHARIDE: — made by dissimilar  
Sugars.

Some important polysaccharide Carbo-  
-hydrates are as follows: —

(A) STARCH: — it is a Complex Carbohydrate which  
is found in plants and absent in animals.  
it is treated with iodine solution. then it  
converts into deep bluish colour. □□