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CARBOHYDRATES, AMINO ACIDS & POLY

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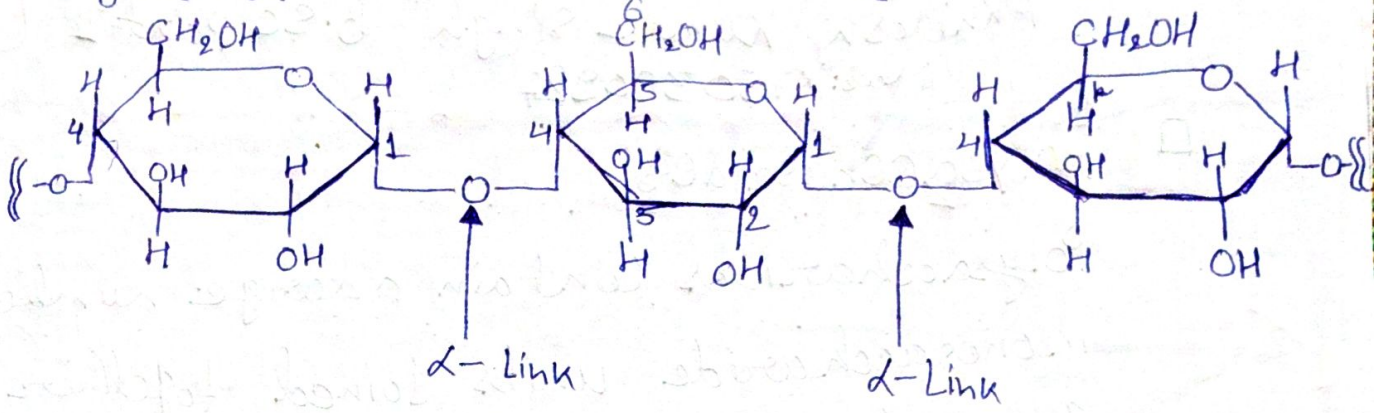
☐ Polysaccharides

Polysaccharides contain a large number of monosaccharide units joined together by glycosidic linkages. They mainly act as the food storage or structural meterials.

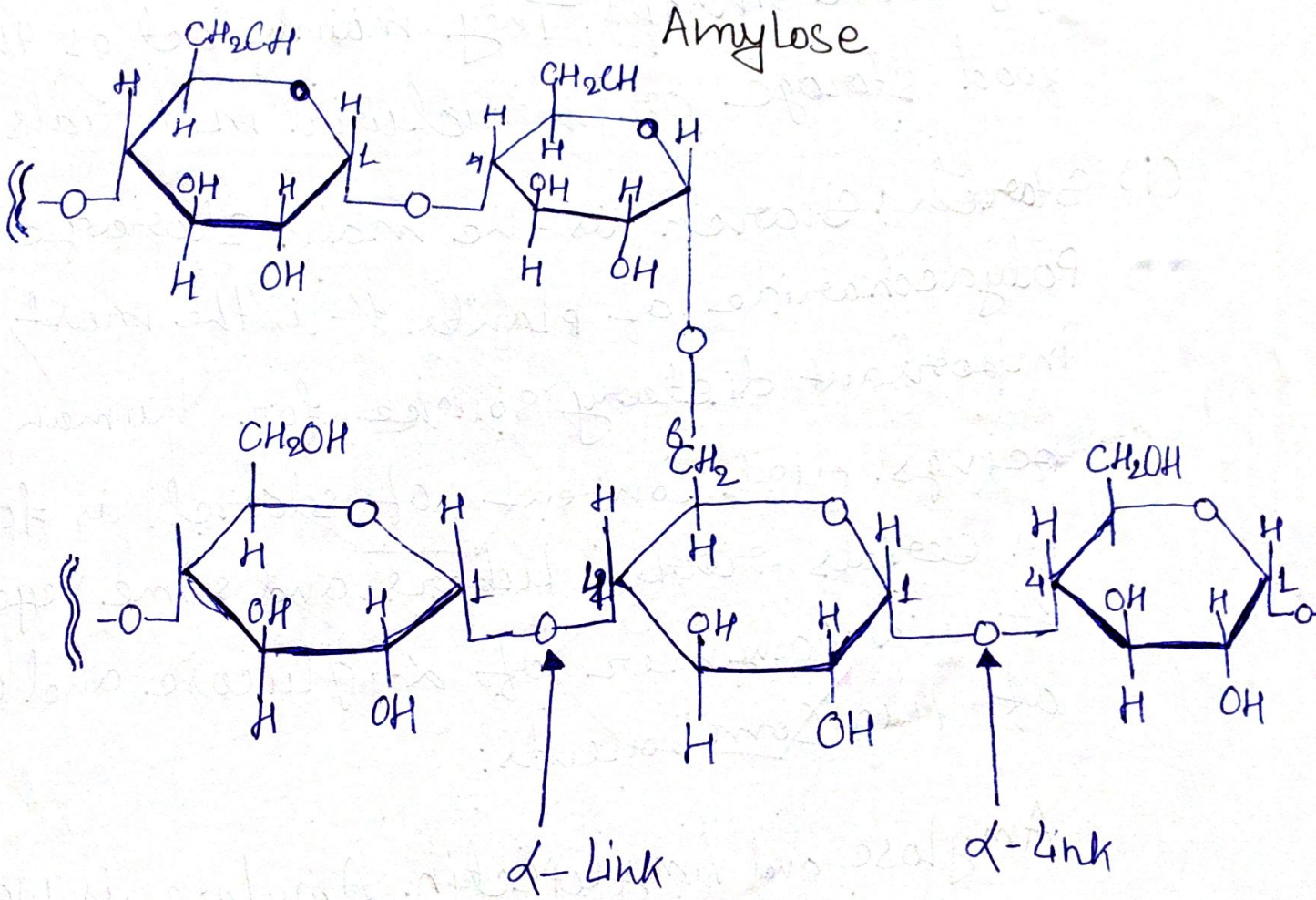
(i) Starch: Starch is the main storage Polysaccharide of plants. It is the most important dietary source for human beings. High content of starch is found in cereals, roots, tubers and some vegetables. It is a polymer of α-glucose and consists of two components:

Amylose and Amylopectin. Amylose is water soluble component which constitutes about 15-20% of Strach. Chemically amylose is a long unbranched chain with 200-1000 α-D-(+)-glucose units held by C1-C4 glycosidic linkage. Amylopectin is insoluble in water

and constitutes about 80-85% of starch. It is a branched chain polymer of α-D-glucose.



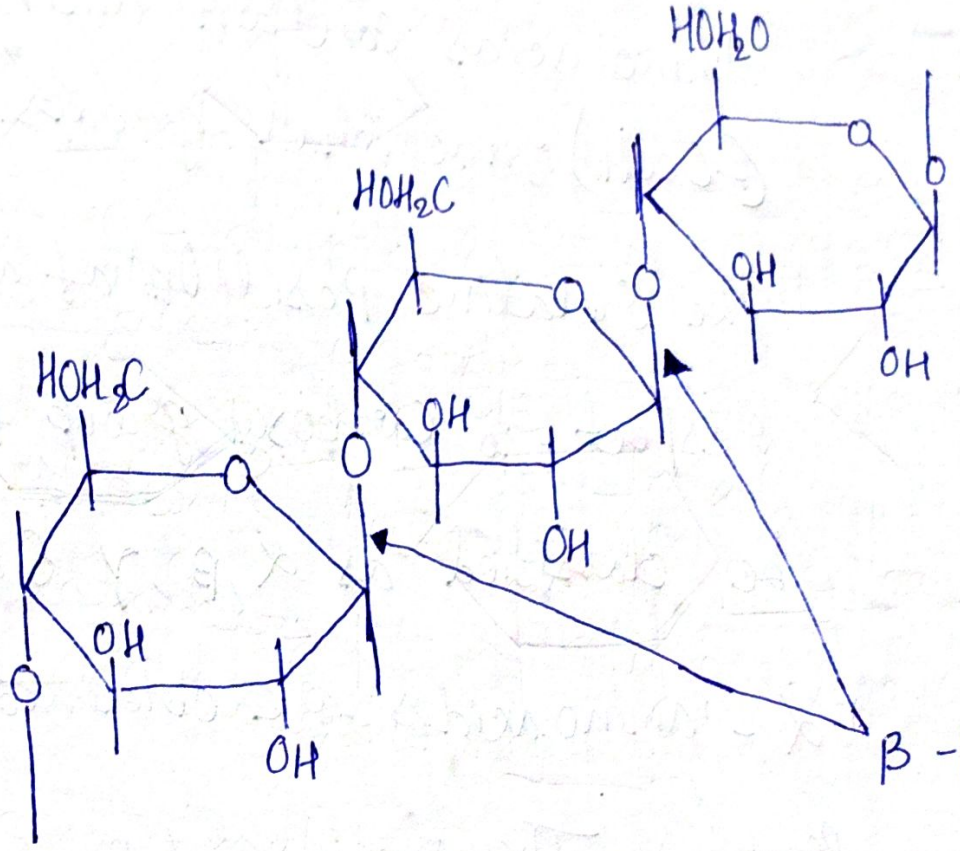
Amylose



Amylopectin

Units in which chain is formed by C1-C4 glyc
linkage whereas branching occurs by C1-C

(ii) Cellulose : Cellulose occurs exclusively in plants and it is the most abundant organic substance in plant kingdom. It is a predominant constituent of cell wall of plant cells. Cellulose is straight chain Polysaccharide composed only of β-D-glucose units which are joined by glycosidic linkage between C1 of one glucose unit and C4 of the next glucose unit.



Cellulose

(iii) Glycogen : The carbohydrates are stored animal body as glycogen. It is also kn as animal starch because its structu

Similar to amylopectin and rather more highly branched. it is present in liver, muscle and brain. when the body needs glucose, enzymes break the glycogen down to glucose. Glycogen is also found in yest and fungi.

AMINO ACIDS

Amino acids contain amino ($-NH_2$) and Carboxy ($-COOH$) functional groups. Depending upon the relative position of amino group with respect to carboxyl group, the amino acids can be classified as $\alpha, \beta, \gamma, \delta$ and so on. only α-amino acids are obtained on hydrolysis of Proteins. They may contain other functional groups also.

$$R-\underset{\displaystyle NH_2}{\underset{|}{CH}}-COOH$$

α-amino acid

(R = Side Chain)

All α-amino acids have trivial names, which usually reflect the property of that compound or its source. Glycine is so named since it has sweet taste (in Greek glykos means sweet) and tyrosine was first obtained from cheese (in Greek, tyros means cheese).