Active Transport:

Moves molecules against their concentration gradient with the use of ATP.

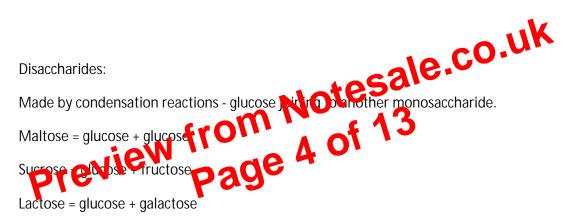
Stopped by cyanide as it inhibits respiration which produces ATP.

**Biological molecules:** 

Carbohydrates:

Contain carbon, hydrogen and oxygen. Ratio of H to O is always 2:1.

Glucose molecule:



Polysaccharides:

Polymer – many monomers joined together.

Monomer – a molecule that can be bonded to other identical molecules to form a polymer.

Starch – formed by many alpha glucose molecules joined together by glycosidic bonds. Starch is made of amylose and amylopectin. It is insoluble so does not affect the water potential of cells. A lot of glucose can be stored in a cell as it is compact.

Glycogen – formed by many alpha glucose molecules joined together by glycosidic bonds. It is branched and insoluble. It makes energy easily and quickly and a lot of glucose can be stored in a cell.

Cellulose – made by many beta glucose molecules joined together by glycosidic bonds. It has straight chained linkages by H bonds. It keeps plant cells rigid.

## Proteins:

Contain the elements carbon, hydrogen and nitrogen.

They are polymers of amino acids.

A chain of amino acids is a polypeptide. They are joined by peptide bonds.

Proteins are made from one or more polypeptides.

Amino acid:

Condensation reactions link amino acids together.

Primary structure - sequence of amino acids.

sale.co.uk Secondary structure – Hydrogen bonds for Normal Secondary Structure – Hydrogen bonds for Normal Secondary Seco he amino acids in the chain. This makes in coil into an alpha belix It into a beta pleated. hee

Tertiary structure d or folded chai proiser fords further. More bonds form at diffective of the chain. In protein, with one polypeptide this is the final 3D shape.

Quaternary structure – The way several polypeptide chains are assembled together. This is their final 3D shape.

Lipids:

Triglycerides – store energy

Phospholipids – make membranes

Made from one molecule of glycerol and three fatty acids.

Glycerol molecule: