**Organic Reactions List**

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| **Reaction** | **Reactants** | **Products** | **Additional conditions** |
| hydrolysis of polysaccharides | - water- polysaccharide | - disaccharide |  |
| hydrolysis of disaccharides | - water- disaccharide | - monosaccharide |  |
| fermentation of glucose | - monosaccharide | - alcohol- carbon dioxide | - yeast enzymes- temperature maintained 20-30°C- low levels of oxygen |
| oxidation of a primary alcohol | - primary alcohol- acidified dichromate (orange) | - aldehyde(with more oxidation, carboxylic acid)- chromium ions (green) | heat |
| oxidation of a secondary alcohol | - secondary alcohol- acidified dichromate (orange) | - ketone- chromium ions (green) | heat |
| oxidation of an aldehyde by acidified dichromate | - aldehyde- acidified dichromate (orange) | - carboxylic acid- chromium ions (green) | heat |
| oxidation of an aldehyde by Tollens' reagent | - aldehyde- Tollen's reagent | - carboxylate anions- silver metal | heat |
| ionisation of a carboxylic acid in water | - carboxylic acid | - carboxylate anion- hydrogen ion | (equilibrium arrow)water |
| carboxylic acid with hydroxide salt | - carboxylate salt- water |  |
| carboxylic acid with carbonate/hydrogen carbonate salt | - carboxylate salt- carbon dioxide- water |  |
| carboxylate anion with acidic solution | - carboxylate anion- hydrogen ion | - carboxylic acid |  |
| protonation of an amine | - amine- hydrogen ion | - substituted ammonium ion |  |
| esterification (condensation) | - carboxylic acid- alcohol | - ester- water | sulfuric acid catalystreflux |
| hydrolysis of an ester (acidic conditions) | - ester- water | - carboxylic acid- alcohol | reflux |
| hydrolysis of an ester (alkaline conditions) | - ester- hydroxide ion | - carboxylate anion- alcohol | reflux |
| amine with carboxylic acid (condensation) | - amide- water | reflux |
| hydrolysis of an amide (acidic conditions) | - amide- hydronium ion | - substituted ammonium ion- carboxylic acid | reflux |
| hydrolysis of an amide (alkaline conditions) | - amide- hydroxide ion | - amine- carboxylate salt | reflux |
| self-ionisation of an amino acid | - amino acid | - zwitterion |  |
| unsaturated compound (alkene group) with bromine or iodine water | (bromine/iodine red-brown) | - saturated compound(mixture colourless) |  |

***NOTE:*** For redox reactions, not all reactants and products (e.g. hydrogen ions, water) have been listed. You should be able to determine these by balancing the half-equations.

Examples of things that don't react:

Oxidation of a tertiary alcohol, carboxylic acid or ketone

Tollens' reagent and the above

Saturated compound and bromine or iodine water