**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 catalyst  reflux |
| 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