Benedict's and Fehling's solutions will both reduce to brick red Cu2O precipitate when warmed with an aldehyde. No reaction happens with ketones, so solution will stay blue.

Tollens' reagent:

Tollens' reagent contains [Ag(NH3)2]+ complex Can be made by:

- 1) Put 2cm3 of 0.10 mol dm-3 silver nitrate solution in test tube
- 2) Add few drops of dilute sodium hydroxide solution. A light brown precipitate should form.
- Add drops of dilute ammonia solution until brown precipitate dissolves completelythis solution is Tollens' reagent.
- Silver ions in Tollens' reagent reduced to silver metal when warmed with an aldehyde, but not with a ketone. Silver will coat the inside of the apparatus to form a silver mirror.
- Aldehydes and ketones are flammable so you have to take great care when heating them. Aldehydes and ketones should always be warmed using a water bath, rather than using a Bunsen burner, to prevent them from catching alight.

Testing for carboxylic acids:

- They are formed by oxidising aldehydes or primary alcohols
- You can test it by:
 - 1) Add 2cm3 of solution that you want to test to a test tube
 - 2) Add 1 small spatula of solid sodium carbonate
 - If solution begins to fizz, bubble the gas that it products prover some limewater in a second test tube a second test tube
- If solution tested contains carboxylice cities to dioxide gas will be produced. When carbon dioxide is bubbled through limewater, limewater turns cloudy
- Careful- this test will five positive result with a type id, so you can only use it to distinguish between organic con Point of the second sec

ca poxylic acid.

Testing for alkenes:

- Involves testing for presence of unsaturation, in case of alkenes, this is testing for double bonds.
 - 1) Add 2cm3 of the solution that you want to test to a test tube
 - 2) Add 2cm3 o bromine water to the test tube
 - 3) Shake the test tube
- If an alkene is present, the bromine water will turn from orange to colourless