

# [Aldehydes, ketones and saccharides essay sample](https://assignbuster.com/aldehydes-ketones-and-saccharides-essay-sample/)

[Food & Diet](https://assignbuster.com/essay-subjects/food-n-diet/), [Alcohol](https://assignbuster.com/essay-subjects/food-n-diet/alcohol/)

Aldehydes – contains a carbonyl group at the end of the carbon chain.
– RCOH

Ketones – contains a carbonyl group in the middle of the carbon chain.
– RCOR

\* 2, 4-dinitrophenylhydrazine Test – Test for Carbonyl group
\* Sodium Bisulfate Test- Test for Aldehydes and Methy Ketones
\* White precipitate
\* Ketones with more than 2 carbon – non-reactive
\* Ketones with 2 carbons – slightly reactive

\* Schiff’s Test – Test for aldehydes
\* Purple solution
\* Formalin – positive
\* Acetone (ketone)
\* Benzaldehyde – positive
\* Acetophenone (aromatic ketone)

\* Tollen’s Test – Test for aliphatic and aromatic aldehydes
\* Silver mirror
\* Formalin – positive
\* Glucose – positive
\* Benzaldehyde – positive
\* Acetone

\* Fehling’s Test – Test for Aliphatic aldehydes
\* Brick red precipitate (cuprous oxide)
\* Formalin – positive
\* Glucose – positive
\* Benzaldehyde
\* Acetone

\* Sodium Nitroprusside Test – Test for presence of acetone
\* -Wine red solution

\* Iodoform Test – Test for Methyl Ketones
\* Acetone – positive
\* Ethyl methyl ketone – positive
\* Ethyl acetate

\* Special test for Benzaldehyde
\* Formation of crystals

\* Molisch Test – General test for Carbohydrates
\* Violet ring (2nd layer)
\* Glucose – positive
\* Starch – positive
\* Benzaldehyde

\* Bial’s Orcinol Test – Test for Carbohydrates
\* 5 carbon – blue to green
\* Ribose – green
\* 6 carbon – brown
\* Glucose – brown

\* Phenylhydrazine Test – Test for reducing sugars
\* Osazone crystals
\* Glucose – positive

\* Optical rotation – property of a substance that could rotate the plane of polarization of a beam of polarized light.

Carboxylic acid – RCOOH
– React with strong bases (NaOH, KOH) to form water soluble salts.

\* Test for carboxylic acid
\* Acetic acid – soluble in water and NaOH
\* Stearic acid – insoluble in water and NaOH

\* Reaction with sodium carbonate
\* Effervescence – release of carbon dioxide

\* Esterification
\* Acetic acid + n-propyl alcohol → propyl acetate
\* Benzoic acid + n-propyl alcohol → propyl benzoate

\* Reaction with Neutral FeCl3
\* Acetic acid – red-orange precipitate
\* Tartaric acid – effluence of red-orange precipitate

\* Special Test for tartaric and citric acid
\* Citric acid – green solution → colorless solution
\* Tartaric acid – brown solution → colorless solution

\* Hydroxamic test for esters
\* Magenta or burgundy solution

\* Hydrolysis reactions
\* Acetic anhydride – blue litmus paper → red litmus paper
\*Acetamide – red litmus paper → blue litmus paper