

Aldehyde, ketone and carboxylic acids

1. Carbonyl compounds mainly show nucleophilic addition reactions. Why?
2. Why it is necessary to control the pH during the reaction of aldehydes and ketones with ammonia derivatives?
3. Formic acid is stronger acid than acetic acid. Why?
4. The bond length of $>C=O$ in carboxylic acid is slightly larger than that in aldehydes and ketones. Why?
5. Why p-nitrobenzoic acid is stronger than benzoic acid?
6. How will you convert an acid into an ester without using an alcohol.
7. Out of p-chlorobenzoic acid and p-nitrobenzoic acid which is stronger and why?
8. Why are aldehydes more reactive than Ketones?
9. Give the IUPAC name of the following compound.
10. Give a suitable example of Hell-Volhard Zelinsky reaction.
11. How can you distinguish an alcohol and a carboxylic acid.
12. How would you obtain Acetone from acetic acid.
13. Show reduction of aldehyde/ketone by 'Clemmensen reduction'.
14. How will you convert acetophenone to benzoic acid.
15. Benzaldehyde is less reactive than acetaldehyde towards nucleophilic addition reactions. Explain.
16. Formaldehyde gives Cannizzaro reaction whereas acetaldehyde does not. Explain.
17. Why acetaldehyde gives aldol condensation, while formaldehyde does not. Explain.
18. Give a chemical test to distinguish between
 - (i) acetophenone and benzophenone
 - (ii) Ethanal and propanal
19. Give one colour test to distinguish an aldehyde and a ketone.
20. How is benzoic acid prepared from :-
 - (i) Toluene (ii) Benzaldehyde

Assertion: Carboxylic acids do not show properties like carbonyl compounds.

Reason: $C=O$ group is not true carbonyl group because of resonance.

Assertion: In carbonyl compounds only H^+ present at alpha carbon release as H^+ .

Reason: Carbocation cation formed stabilised by resonance.

Assertion: In Rosenmund reaction alpha hydrogen replaced by halogen.

Reason: Free radical formed is highly stable.