

B Sc semester IV ORGANIC CHEMISTRY

(Prof ERA GARG)

Some Important/Test Questions

- Q.1a) How is benzene diazonium chloride prepared from aniline?
b) What are its synthetic applications?
- Q.2a) Give an account of coupling reactions of benzene diazonium chloride with phenols and amines.
b) Discuss the role of pH in coupling reaction.
- Q.3.a) Why excess of mineral acid is added during diazotisation of arylamines?
b) Why ~~are~~ arenediazonium salts are much more stable than alkanediazonium salts?
- Q.4. a) Explain Sandmeyer reaction. In what respect, does it differ from Gattermann reaction.
b) Discuss structure of benzenediazonium chloride
c) Discuss briefly the geometrical isomerism of diazotates.
- Q.5 a) How will you synthesise 1,3,5-tribromobenzene from aniline?
b) How diphenyl is prepared from benzene?
- Q.6 a) How toluene can be converted in p-toluic acid via formation of diazonium salt?
b) How will you convert aniline into fluorobenzene?

Some Important / Test Questions

- Q.7 a) What is aldol condensation?
b) What is the difference between acid catalysed and base catalysed aldol condensation reactions?
- Q.8 a) Discuss Rosenmund's reduction for preparing benzaldehyde
b) How will you explain role played by steric and electronic factors in reactivity of aldehydes and ketones towards nucleophilic addition reactions?
- Q.9 a) Discuss the advantages of oxidation of alcohols with
(i) Swern Reagent (ii) PCC (iii) PDC
b) Explain addition-elimination mechanism for the reaction of aldehydes and ketones with ammonia derivatives.
- Q.10. How will you convert
i) formaldehyde to urotropine
ii) benzaldehyde to cinnamic acid
iii) acetaldehyde to crotonaldehyde (But-2-ene-1-al)
- Q.11 a) Name the reagent and reaction involved used to convert acetophenone into phenyl acetate. Discuss mechanism also.
b) Why are α -hydrogens of aldehydes and ketones acidic in nature?
- Q.12 a) Explain what happens when acetone is added slowly to formaldehyde in presence of alkali.
b) Why are aldehydes stronger reducing agents than ketones?
- Q.13 a) How will you prepare $C_6H_5CH=CHC_6H_5$ by a Wittig reaction?
b) Discuss mechanism of Meerwein-Ponndorf-Verley reduction.

Some Important / Test Questions

Q.14 a) Discuss the mechanism of Mannich Reaction.

b) Why aldehydes and ketones of low molecular weight are soluble in water?

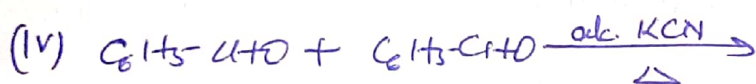
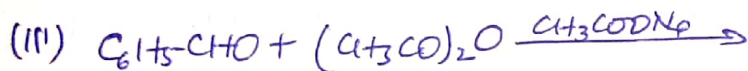
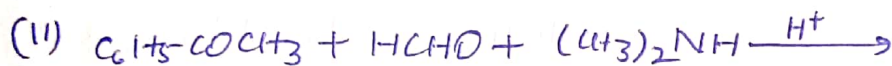
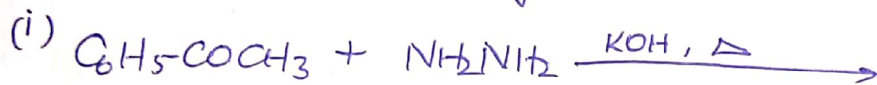
Q.15 Explain

a) Dipole moments of aldehydes and ketones are higher than those of alcohols.

b) Aldehydes and ketones have lower boiling points than alcohols and carboxylic acids.

c) Aromatic aldehydes undergo nucleophilic addition reactions less readily than aliphatic aldehydes.

Q.16 Complete the following reactions :-



Q.17 a) During Benzoin condensation, how CN^- catalyses reaction, elaborate.

b) In preparation of dibenzalacetone, why benzaldehyde is used in excess?

Q.18 a) What role is played by pH during addition of ammonia derivatives to aldehydes and ketones?

b) Discuss mechanism of Cannizzaro reaction.