

## QUESTIONS FOR PRACTICE

### HYDROCARBONS

1. Name the least stable cycloalkane.
2. What is angle strain?
3. What is the state of hybridisation of carbon atoms in benzene?
4. Calculate the angle strain in cyclobutane.
5. Calculate the angle strain in cyclopentane.
6. Calculate the angle strain in cyclohexane.
7. Give the structural elucidation of benzene.
8. Explain the mechanism of nitration of benzene.
9. Explain the mechanism of Friedel-Craft's alkylation of benzene.

### HALOALKANES

1. Give the IUPAC name of  $\text{CH}_3\text{-CHCl-CH}_3$ .
2. Give one example for secondary alkyl halide.
3. Name the reagent used for dehydrohalogenation of organic compounds.
4. Name the gaseous product formed when bromoethane is heated with alcoholic potash.
5. What is the product formed when ethyl bromide is heated with alcoholic KCN?
6. What is the product formed when ethyl bromide is heated with alcoholic AgCN?
7. Give the general formula of Grignard's reagent.
8. Mention the chief product formed when ethylbromide is heated with dry sodium in ether.
9. What is the catalyst used in Friedel-Craft's reaction?
10. Explain the reaction of alkylhalides with alcoholic ammonia in a sealed tube.
11. How do you convert ethyl bromide to ethylene?
12. Give any four differences between  $\text{S}_{\text{N}}1$  and  $\text{S}_{\text{N}}2$  mechanism.

### ALDEHYDES AND KETONES

1. Give the IUPAC name of acetone.
2. Name the catalyst used for dehydrogenation of alcohols.
3. Which is the product formed by the dehydrogenation of a primary alcohol?
4. Which is the product formed by the dehydrogenation of a secondary alcohol?
5. What happens when calcium acetate is dry distilled?

6. What happens when calcium formate is dry distilled?
7. Name the reaction, which involves the conversion of benzaldehyde to a mixture of benzyl alcohol and benzoic acid using sodium hydroxide.
8. Name the reducing agent used in Clemmensen's reduction.
9. What type of aldehydes undergo Cannizzaro's reaction?
10. Name the aldehyde which does not give Fehling's solution test.
11. Give two uses of formaldehyde (Or methanol).
12. Give two uses of benzaldehyde.
13. Give two uses of acetophenone.
14. Explain the preparation of aldehydes from primary alcohols by oxidation method.
15. Explain the dehydrogenation of primary alcohols.
16. Explain the preparation of ketones from secondary alcohols by oxidation method.
17. Explain the dehydrogenation of secondary alcohols (How is acetone obtained from isopropylalcohol?).
18. Explain with an example the reaction of aldehydes with sodium bisulphite ( $\text{NaHSO}_3$ ).
19. Explain with an example the reaction of ketones with sodium bisulphite ( $\text{NaHSO}_3$ ).
20. How do you convert acetaldehyde to crotonaldehyde?
21. How does acetaldehyde react with Tollen's reagent?
22. How does acetaldehyde react with Fehling solution?
23. Explain with equations how to convert ketone into hydrocarbon ( Or How do you convert acetone to propane?)
24. How does benzaldehyde react with strong KOH (Or explain with equations how to convert aldehyde containing no  $\alpha$ -hydrogen to a mixture of sodium salt of the carboxylic acid and alcohol).