

CLASS XI
HYDROCARBONS

ONE MARK QUESTIONS

- 1 Effect the following conversions: (1 mark each)
- a) benzene to m-nitrochlorobenzene
 - b) benzene to acetophenone
 - c) ethane to benzene
 - d) 1-propanol to 2,3-dimethyl butane
 - e) Ethane to butane
 - f) Acetic acid to methane
 - g) Acetic acid to ethane
 - h) 2-propanol to hexane
 - i) ethyne to benzene
- 2 Which geometrical isomer of 2-hexene will have a higher boiling point? Why?

TWO MARKS QUESTIONS

- 1 Which of the following will exhibit geometrical isomer? Why?
- a) 1-pentene b) 2-pentene
- 2 Give chemical equation for the following reactions.
- a) Ethyne is passed through red hot copper tube.
 - b) Propane is treated with Cl_2 in diffused sunlight
- 3 How will you distinguish between (2 marks each)
- a) propane and propene b) propene and propyne
 - c) 1-butyne and 2-butyne d) propane and propyne
- 4 Explain why
- a) Nitro group is meta directive
 - b) Acetylenic hydrogen is acidic
- 5 Draw
- a) Newman projection for the staggered and eclipsed conformations in propane
 - b) Saw Horse projection for the staggered and eclipsed conformations in butane between C_1 and C_2 .

- 6 Write the structure and classify the carbon atoms as primary, secondary and tertiary in
2, 3, 3-trimethyl pentane
- 7 An alkene on ozonolysis gives a mixture of ethanal and pentan-3-one. Write the structure and IUPAC name of the alkene.
- 8 Explain Markovnikov rule with a suitable example.

THREE MARKS QUESTIONS

- 1 What happens when?
- a) Acetylene is treated with ammoniacal AgNO_3 solution.
 - b) 2-methyl-2-butene is treated with alk. KMnO_4 at 373K.
 - c) 2-methylpropene is treated with bromine water
- 2 Give reasons:
- a) Benzene undergoes electrophilic substitution reactions.
 - b) Alkenes undergo electrophilic addition reactions easily.
 - c) Nitration of toluene is easier than benzene
- 3 Explain the following reactions.
- a) Friedel Craft acylation.
 - b) Kolbe's electrolysis
 - c) Wurtz reaction
