Vidyamandir Classes
Gurukul for IIT/JEE & Medical Preparation

Hydrocarbons

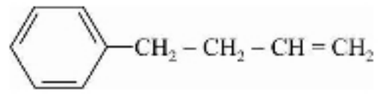
Date Planned : __ / __ / __	Daily Tutorial Sheet	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-0	Exact Duration :_____

Very Short Answer Type (1 Mark)

1. How do you account for the formation of ethane during chlorination of methane?

2. Write IUPAC names of the following compounds:

(a) $CH_3CH = C(CH_3)_2$ **(b)** $CH_2 = CH - C \equiv C - CH_3$

(c)  **(d)** 

(e) $CH_3(CH_2)_4\,CH(CH_2)_3CH_3$ with $CH_2 - CH(CH_3)_2$ as a branch on the CH

(f) $CH_3CH=CH-CH_2-CH=CH-CH-CH_2-CH=CH_2$ with C_2H_5 as a branch on the CH

3. For the following compounds, write structural formulae and IUPAC names for all possible isomers having the number of double or triple bond as indicated:

(a) C_4H_8 (one double bond) **(b)** C_5H_8 (one triple bond)

4. Write IUPAC names of the products obtained by the ozonolysis of the following compounds:

(i) Pent-2-ene **(ii)** 3, 4-dimethylhept-3-ene

(iii) 2-ethylbut-1-ene **(iv)** 1-phenylbut-1-ene

5. An alkene 'A' on ozonolysis gives a mixture of ethanal and pentan-3-one. Write structure and IUPAC name of 'A'.

6. An alkene 'A' contains three C–σ – bonds , eight C–H σ – bonds and one C – C π – bond . 'A' on ozonolysis gives two moles of an aldehyde of molar mass 44u. Write IUPAC name of 'A'.

Short Answer Type-I (2 Marks)

7. Propanal and pentan-3-one are the ozonolysis products of an alkene? What is structural formula of the alkene ?

8. Write chemical equations for combustion reaction of the following hydrocarbons:

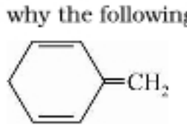
(i) Butane **(ii)** Pentene **(iii)** Hexyne **(iv)** Toluene

9. Draw the cis- and trans- structures of hex-2-ene. Which isomer will have higher boiling point and why?

10. Why is benzene extra ordinarily stable though it contains three double bonds?

11. What are the necessary conditions for any system to be aromatic?

12. Explain why the following systems are not aromatic?

(i)  **(ii)**  **(iii)**