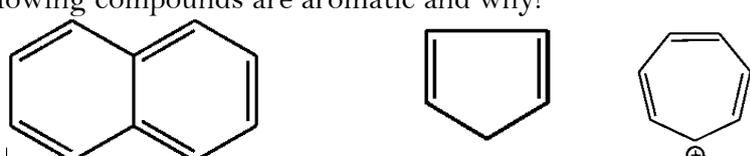




INDIAN SCHOOL DARSAIT  
DEPARTMENT OF CHEMISTRY



Subject: Chemistry		Topic: HYDROCARBONS		Date : 14.01.17	
Resource Person: Jyothy Sukhadiya					
Name of Student: _____		Class & Division: XI :		Roll No:	
1.	What effect does branching of an alkane chain has on its boiling point?			1	
2.	Iodination of methane is carried out in the presence of an oxidizing agent. Why?			1	
3.	Explain: a) Wurtz reaction b) Kolbe's electrolysis c) Decarboxylation			3	
4.	Sodium salt of which acid will be needed for the preparation of propane? Write chemical equation for the reaction.			1	
5.	Explain the free radical mechanism of chlorination of methane.			2	
6.	Complete the following: a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COONa} + \text{NaOH} \xrightarrow{\text{CaO}}$ b) $\text{CH}_3\text{COONa} \xrightarrow{\text{Electricity}}$			1 each	
7.	Effect the following conversions: a) Chloropropane to propane b) Bromopropane to hexane c) Acetic acid to ethane. d) Acetic acid to methane e) Ethane to butane f) 2-bromopropane to 1-bromopropane g) isopropyl chloride to 2,3-dimethylbutane h) benzene to m-nitrochlorobenzene i) benzene to acetophenone			1	
8.	Draw the Newman projection and Saw Horse projection for the staggered and eclipsed conformer of propane.			2	
9.	What happens when? a) Chloropropane is treated with zinc and HCl b) Propane is treated with $\text{Cl}_2$ in diffused sunlight. c) Ethyne is treated with $\text{H}_2$ in presence of Ni.			1 each	
10.	Account for the following: a) cis but-2-ene is polar whereas trans but-2-ene is non polar. b) trans isomer has higher melting point than cis isomer. c) cis isomer has higher boiling point than trans isomer. d) Peroxide effect is observed only with HBr , not with HCl or HI. e) $-\text{NH}_2$ , $-\text{OH}$ , $-\text{Cl}$ , $-\text{CH}_3$ groups in the benzene ring are o- and p- directing whereas $-\text{NO}_2$ $-\text{COOH}$ , $\text{CHO}$ groups are meta directing in nature.			1 each	

11.	Which of the following will exhibit geometrical isomer? Why? 1-pentene or 2-pentene	1
12.	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	1 each
13.	Which of the following compounds will show cis-trans isomerism? (i) $(\text{CH}_3)_2\text{C} = \text{CH}-\text{C}_2\text{H}_5$ (ii) $\text{CH}_2 = \text{CBr}_2$ (iii) $\text{C}_6\text{H}_5\text{CH} = \text{CH}-\text{CH}_3$ (iv) $\text{CH}_3\text{CH} = \text{CCl CH}_3$	1 each
14.	What is a) Lindlar's catalyst? b) Baeyer's reagent?	1 each
15.	Explain Markovnikov's rule with an example.	2
16.	Explain the mechanism in addition of HBr to Propene.	2
17.	Explain Kharasch effect with an example.	2
18.	Explain the mechanism in addition of HBr to Propene in the presence of benzoyl peroxide. .	2
19.	Acetylenic hydrogen is acidic. Justify.	1
20.	What are the conditions for a compound to be aromatic?	2
21.	Which of the following compounds are aromatic and why? 	1 each
22.	Explain the mechanism of: a) Nitration of benzene b) Alkylation/acylation of benzene.	2 each
23.	Identify the structure of the following alkenes and give their IUPAC names. a) An alkene that gives a mixture of ethanoic acid and butan-2-one on treatment with $\text{KMnO}_4/\text{H}^+$ at 373 K b) An alkene that gives a mixture of propanal and pentan-3-one on ozonolysis. c) An alkene that gives only propanal on ozonolysis.	1 each
24.	What happens when? a) 2-methyl-2-butene is treated with alk. $\text{KMnO}_4$ at 373K b) 2-methylpropene is treated with bromine water c) Ethyne is passed through red hot iron tube at 873 K d) Propane is treated with $\text{Cl}_2$ in diffused sunlight	1 each
25.	How will you distinguish between a) ethane and ethene b) propene and propyne c) but-1-yne and but-2-yne d)butane and butyne	1 each