DPP

DAILY PRACTICE PROBLEMS

CLASS : XIIth
DATE :

SOLUTION

SUBJECT : CHEMISTRY
DPP NO. : 10

Topic :-HYDROCARBONS

1 **(d)**

On ozonolysis,

$CH_2 = \underset{\displaystyle CH_3}{\underset{|}{C}} = C - CH = CH_2$ gives two moles of HCHO, one mole of CO_2 one mole of CH_3COCHO.

$$CH_2 = \underset{\displaystyle CH_3}{\underset{|}{C}} = C - CH = CH_2 \xrightarrow[Zn]{O_3/H_2O} 2CH_2O + CO_2 + CH_3COCHO$$

(HCHO)

2 **(c)**

$$CH_3CH_2Cl \xrightarrow{KOH\ alc.} CH_2 = CH_2$$

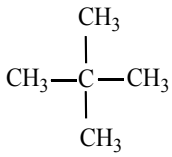
3 **(c)**

$$C_nH_{2n+2} + \left(\frac{3n+1}{2}\right)O_2 \longrightarrow nCO_2 + (n+1)H_2O$$

5 **(b)**

Cycloalkanes are isomeric with alkenes because they have same general formula C_nH_{2n} (*i.e.*, same molecular formula) but possessing different structures. They show ring chain isomerism.

6 **(b)**



is symmetrical alkane and will give only one monochloro substitution.

8 **(d)**

Rest all are used to convert>CO gp. to CH_2.

9 **(d)**

The presence of the chlorine atom on benzene ring makes the second substituent enter at *ortho* or *para* position because the chlorine atom is *ortho* − *para* directing.

10 **(a)**

Given, $C = \left(\frac{12}{13}\right) \times 100\%,\ H = \left(\frac{1}{13}\right) \times 100\%$

$\therefore \quad C = 92.3\%\ H = 7.69\%$

$C = \frac{92.3}{12} = 7.69 = \frac{7.69}{7.69} = 1$

$H = \frac{7.69}{1} = 7.69 = \frac{7.69}{7.69} = 1$

$\therefore$ Empirical formula of hydrocarbon is $C_1H_1 = CH$

$\therefore$ *A* has empirical formula CH and decolourises bromine water.

$\therefore$ It is alkyne which is C_2H_2.

$\therefore$ *B* has empirical formula CH and does not decolourise bromine water.

$\therefore$ It is benzene C_6H_6.

11 **(c)**

Due to acidic nature of the hydrogen atoms attached to a triple bond, acetylenes and terminal alkynes from metal acetylides

$CH_3CH_2C \equiv CH + AgNO_3 + NH_4OH \rightarrow CH_3CH_2C \equiv CAg + NH_4NO_3 + H_2O$

silver butynide

13 **(b)**

Cetane no. represent percentage of *n*-hexadecane in mixture.

14 **(c)**

Conjugated alkadienes show 1 : 2 and 1 : 4 addition.

15 **(d)**

Na/C_2H_5OH, $LiAlH_4$ or $NaBH_4$ are used for this purpose.

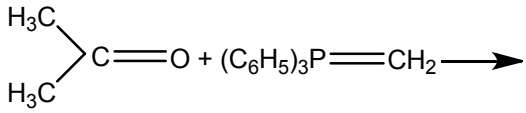
16 **(c)**

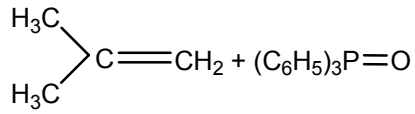
This is also a mean of preparing alkene where the position of the double bond is definite. In Wittig reaction, aldehyde ($-CHO$) and ketone ($>C=O$) react with methylene tryphenyl phosphine $[(C_6H_5)_3P = CH_2]$ to give alkene.

$CH_3CHO + (C_6H_5)_3P = CH_2$

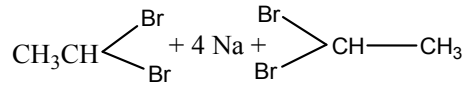
$\rightarrow CH_3 - CH = CH_2 + (C_6H_5)_3P = O$

Propane triphenyl phosphine oxide





17 **(c)**



$$\xrightarrow[\Delta]{\text{Ether}} CH_3 - CH = CH - CH_3 + 4NaBr$$

2-butene

19 **(d)**

Octane number is a measure of quality of fuel.

20 **(d)**

All possible products are obtained; C_2H_6 by CH_3COO^-; C_4H_{10} by $CH_3CH_2COO^-$ and $CH_3CH_2CH_3$ by C H_3COO^- and $CH_3CH_2COO^-$.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	D	C	C	B	B	B	A	D	D	A
Q.	11	12	13	14	15	16	17	18	19	20
A.	C	B	B	C	D	C	C	B	D	D