DPP
DAILY PRACTICE PROBLEMS

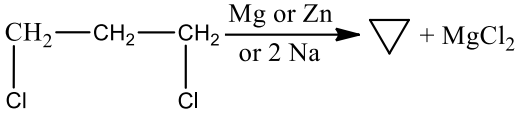
CLASS : XIIth
DATE :

SOLUTIO

SUBJECT : CHEMISTRY
DPP NO. :2

Topic :-HALOALKANES AND HALOARENES

1 **(a)**



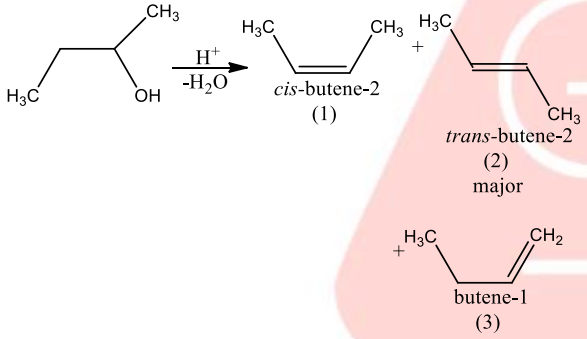
α and ω-dihalogen derivative of an alkane on treatment with Mg or Zn or Na gives cycloalkane.

2 **(b)**

$C_2H_5I \xrightarrow{KOH(alc.)} C_2H_4 \xrightarrow{Br_2} CH_2BrCH_2Br$

$CH_2BrCH_2Br \xrightarrow{KCN} CH_2CNCH_2CN$

3 **(d)**



In [F] order of quantity of alkene 2 > 1> 3

These on addition with Br_2/CCl_4 to give their addition products which have $C_4H_6Br_2$ as molecular formula.

(1) $CH_3-\underset{\displaystyle Br}{\underset{|}{CH}}-\underset{\displaystyle Br}{\underset{|}{CH}}-CH_3$

(2) $CH_3-\underset{\displaystyle Br}{\underset{|}{CH}}-\underset{\displaystyle Br}{\underset{|}{CH}}-CH_3$

(3) $BrH_2C-\underset{\displaystyle Br}{\underset{|}{CH}}-CH_2-CH_3$

(4) $BrH_2C-CH_2-CHBr-CH_2$

(5) $CH_2Br-CH_2-CH_2-CH_2Br$

5 **(d)**

$CH_2OHCH_2OH \xrightarrow{HCl} CH_2ClCH_2Cl$

7 **(d)**

Tertiary carbonium is most stable.

8 **(a)**

$CH_2=CH-CH=CH_2 + Br_2 \longrightarrow$

1,3-butadiene

(i) $CH_2 = CH - \underset{|\atop Br}{CH} - \underset{|\atop Br}{CH_2}$

3,4-dibromo butane

(ii) $\underset{|\atop Br}{CH_2} - CH = CH - \underset{|\atop Br}{CH_2}$

1,4-dibromo-2-butene

1,4-adduct is more stable than the 1,2-adduct.

10 **(d)**

Write chlorination reaction for all of them to find which gives of the maximum number of monochlorination product.

(a) $CH_3CH_2CH_2CH_2CH_3 + Cl_2 \xrightarrow{UV}$

$ClCH_2 - (CH_2)_3CH_3 + CH_3 - \overset{Cl\atop |}{CH} - (CH_2)_2CH_3 + CH_3 - CH_2 - \underset{|\atop Cl}{CH} - CH_2 - CH_3$

∴ Total 3 monochlorinated products are formed.

(b) $CH_3 - \underset{|\atop CH_3}{CH} - CH_2 - CH_3 + Cl_2 \xrightarrow{UV}$

$ClCH_2 - \underset{|\atop CH_3}{CH} - CH_2 - CH_3 + CH_3 - \overset{Cl\atop |}{\underset{|\atop CH_3}{C}} - CH_2 - CH_3 + CH_3 - \underset{|\atop CH_3}{CH} - CH_2 - CH_2Cl$

∴ Total 3 monochlorinated products are formed.

(c) $CH_3 - \overset{CH_3\atop |}{\underset{|\atop CH_3}{C}} - H + Cl_2 \xrightarrow{UV}$

$CH_3 - \overset{CH_3\atop |}{\underset{|\atop CH_3}{C}} - Cl + CH_3 - \overset{CH_2Cl\atop |}{\underset{|\atop CH_3}{C}} - H$

∴ Total 3 monochlorinated products are formed.

(d) $CH_3 - \overset{CH_3\atop |}{\underset{|\atop CH_3}{C}} - CH_3 + Cl_2 \xrightarrow{UV}$

CH_3
|

$$CH_3 - \underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}} - CH_2Cl$$

∴ Only one monochlorinated products formed.

11 **(a)**

$$CH_3 - \underset{\displaystyle Cl}{\overset{\displaystyle Cl}{\overset{|}{\underset{|}{C}}}} - CH_3 \xrightarrow{\text{Hydrolysis}} CH_3 - \underset{\displaystyle OH}{\overset{\displaystyle OH}{\overset{|}{\underset{|}{C}}}} - CH_3$$

2,2-dichloro propane — unstable

$$\xrightarrow[-H_2O]{} CH_3 - \underset{\displaystyle O}{\overset{\displaystyle O}{\overset{\|}{\underset{|}{C}}}} - CH_3$$

acetone

12 **(d)**

$$CH_2 = CHCl + HCl \rightarrow CH_3 - CHCl_2$$

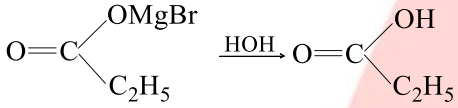
ethylidene chloride
sor
1, 1 dichloroethane

13 **(a)**

$\mu_{CCl_4} = 0;\ \mu_{CHCl_3} = 1.0\ D;\ \mu_{CH_2Cl_2} = 1.6\ D, \mu_{CH_3Cl} = 1.86\ D$

134 **(b)**

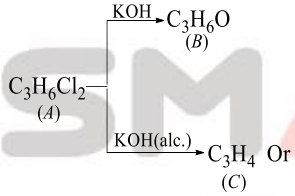
$$O{=}C{=}O + C_2H_5OMgBr \longrightarrow$$



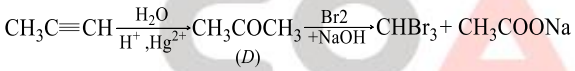
15 **(b)**

$$CH_3COOAg + CH_3Cl \longrightarrow CH_3COOCH_3 + AgCl$$

16 **(a)**



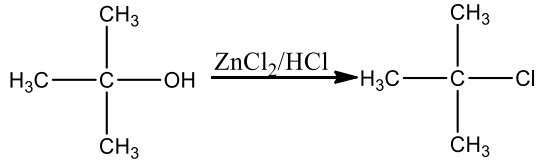
Or



Since, *B* and *D* are different thus, *B* is CH_3CH_2CHO and so *A* is $CH_3CH_2CHCl_2$.

18 **(a)**

Tertiary alcohols readily react with Lucas reagent ($ZnCl_2$/conc. HCl) to give white turbidity due to the formation of halide.



20 **(a)**

Carbylamine test is a characteristic test of aliphatic and aromatic primary amines. In this test, amine is heated with chloroform and alcoholic potash when a bad smelling isocyanide (carbylamine) is formed.

$$RNH_2 + CHCl_3 + 3KOH\ (alc.) \xrightarrow{\Delta} \underset{\substack{\text{alkyl isocyanide}\\ \text{(bad smelling)}}}{RN{\equiv}C} + 3KCl + 3H_2O$$

in ether.

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