

CLASS : XIIth DATE :

SOLUTION

SUBJECT : CHEMISTRY DPP NO. :4

Topic :-HALOALKANES AND HALOARENES

1 (a)

Tertiary halide preferentially undergo $S_{N}\mathbf{1}$ substitution as they can give stable carbocation.

 CH_3

|
H₃C − C − Cl
$$\frac{\text{Slow}}{-\text{Cl}}$$
 (H₃C)₃C⁺ $\frac{+ 0\text{H}^{-}}{\text{fast}}$ (H₃C)₃COH
|
Carbocation t-butyl alcohol
CH₃
t-butyl chloride
2 (d)
In CHCl₃, carbon is sp³-hybridised.
3 (d)
CCl₄ + KOH(aq.) → C(OH)₄ → CO₂ + 2H₂O
4 (c)
CCl₄ + 2HF $\xrightarrow{\text{SbCl}_3}$ CCl₂F₂ + 2HCl
5 (c)
Iodoform test is positive for compounds which have O
|
CH₃ − C
group or 2° alcohol group.
H
(a) CH₃ − CH₂ − C − CH₃
|
OH
has 2° alcoholic group
0
|
(b)CH₃ − CH₂ − CH₂ − C − CH₃
has CH₃CO − group
0
|
0

(d) CH₃ - C - C₆H₅ has CH₃CO - group
∴ Compounds in choice (a), (b) and (d) give positive iodoform test.
0
||
CH₃ - CH₂ - C - CH₂ - CH₃
∵ This compound doesn't have CH₃CO - or 2° alcoholic group.
∴ It does not give positive iodoform test.
6 (a)
In C₆H₅Cl, Cl is firmly attached to C₆H₆ nucleus.
7 (b)

For iodoform reaction, we need an oxidising agent which is provided by only $\frac{I_2}{KOH}$, *i.e.*, IO⁻ ion.

Hypoiodide ion first oxidises

 $CH_3CH_2OH \rightarrow CH_3CHO$

and then brings about iodination of CH₃CHO to I₃C . CHO. Alkaline hydrolysis of Cl₃CHO then gives

CHl₃. The other three reagents do not contain any oxidising species and hence, fail to give iodoform

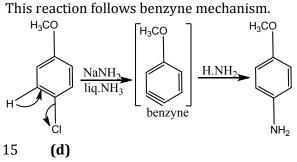
test.

9 **(b)**

Statement (b) is not correct regarding the $S_N 1$ reaction for alkyl halide because in $S_N 1$ reaction no inversion takes place. The removal of X and the attachment of OH^- will take place from the same side.

 $R - X \xrightarrow{Slow} R^{+} + X^{-}$ $R^{+} + OH^{-Fast} ROH$ 10 (c) Alkyl halides are soluble in organic solvents. 11 (d) C₂H₅Br + AgNO₂(alc.) \rightarrow C₂H₅NO₂ + AgBr nitro ethane

13 **(a)**



Grignard reagent give nucleophilic addition (of R^-) at +ve centre.

16 **(a)**

Tetrahydrofuran when treated with excess HI, give 1, 4-diiodobutane.

$$\begin{array}{c} & & \\ & &$$

 I_2 possesses antiseptic nature.

19 **(d)**

Wurtz's reaction involves the



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

