NAME: Enoma-Iruayanama Amirayanasam Victoria
MATRIC NO: 19/mhs01/155
DEPARTMENT: Medicine & Surgery.
COURSE: CHM 102

(1) Classification of examples and an example each

(a) Primary alcohols (1°): Alcohols containing CH_3CH_2OH (Ethanol).

(b) Secondary alcohols (2°): Contain only one hydrogen atom. e.g $CH_3CH(OH)CH_3$.

(c) Tertiary alcohols (3°): Contain no hydrogen atom attached to the carbon atom bearing the O

e.g $CH_3-CH_2-\underset{CH_3}{\overset{OH}{C}}-CH_3$ 2-methyl butan-2-ol

(2) Solubility of alcohols in water, Organic Solvents.

→ Alcohols with up to three carbon atoms are solu in water as a result of their ability to form h bond with water.

→ All monohydric alcohols are soluble in organic sol

(4) Reaction between 2-methyl propanal and butylmagnesium chloride.

2methyl propanal + butylmagnesium chloride

$CH_3CH(CH_3)CHO + CH_3(CH_2)_3MgCl$

$\downarrow$

$CH_3CH(CH_3)-\overset{H}{\underset{(CH_2)_3CH_3}{C}}-OMgCl$

hydrolysis $\downarrow$ H^+ OH^-

$CH_3CH(CH_3)-\overset{H}{\underset{(CH_2)_3CH_3}{C}}-OH + Mg(OH)Cl$ (2-methyl hexan-3-ol)

(5) Question was asked to be skipped

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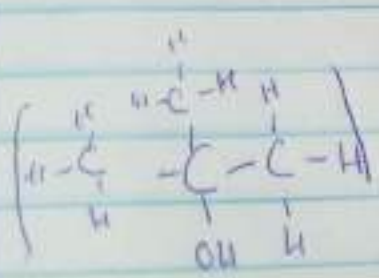
(7) Reduction of 2-methyl propanal.

$CH_3\underset{CH_3}{CH}CH=O \xrightarrow[LAlH_4]{H^+} CH_3\underset{CH_3}{CH}CH_2OH$

2methyl propanal 2methyl propanal



$CH_3-CH_2-\overset{OH}{\underset{CH_3}{C}}-CH_3$

2methylbutan-