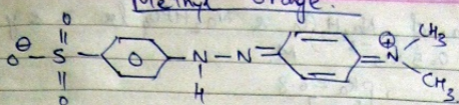
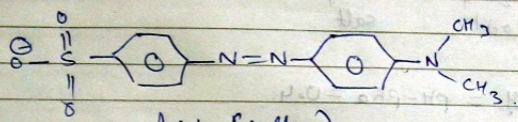


Methyl Orange.

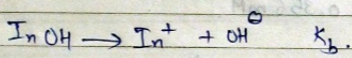
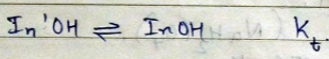
2)



Basic (Red).



Acidic (Yellow).



$$K_t = \frac{[\text{InOH}]}{[\text{In}^+][\text{OH}^-]}$$

$$K_b = \frac{[\text{In}^+][\text{OH}^-]}{[\text{InOH}]}$$

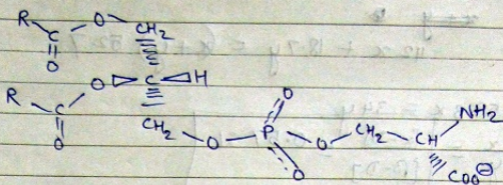
$$K_{In} = K_t K_b = \frac{[\text{In}^+][\text{OH}^-]}{[\text{In}^+\text{OH}]}$$

$$-\log K_{In} = -\log \frac{[\text{In}^+]}{[\text{In}^+\text{OH}]} - \log [\text{OH}^-]$$

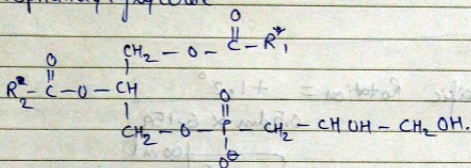
$$\Rightarrow pK_{In} = pOH - \log \frac{[\text{In}^+]}{[\text{In}^+\text{OH}]}$$

$$\Rightarrow \boxed{pH = 14 - pK_{In} - \log \frac{[\text{In}^+]}{[\text{In}^+\text{OH}]}}$$

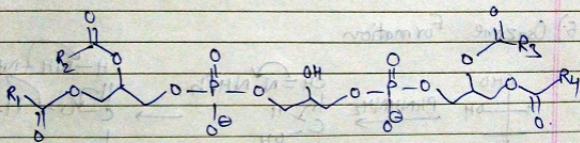
3) Phosphatidylserine (Ptd-L-Ser or PS)



Phosphatidyl glycerol.



Diphosphatidyl glycerol (Cardiolipin).



Palmitic Acid ($\text{C}_{16}\text{H}_{32}\text{O}_2$)

Cetyl Alcohol ($\text{C}_{16}\text{H}_{34}\text{O}$)

Myricyl Alcohol ($\text{C}_{30}\text{H}_{62}\text{O}$)

4) Let conc. of α -D & β -D be x & y .

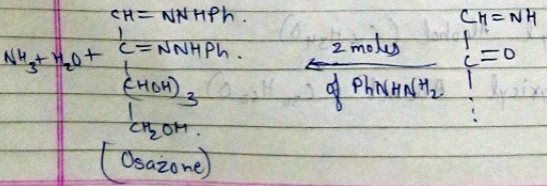
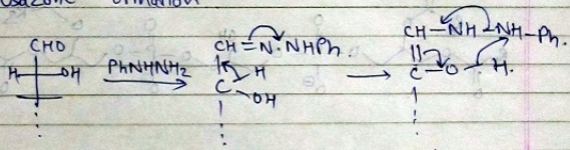
~~$x + y$~~
 $112x + 18.7y = (x + y) 52.7$

$\Rightarrow 59.3x = 34y$

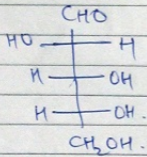
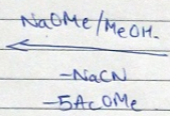
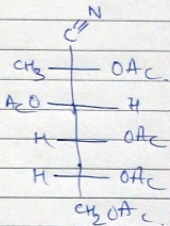
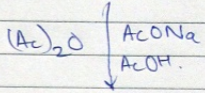
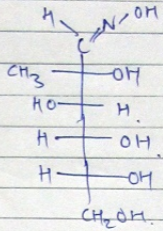
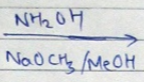
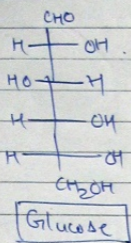
$\therefore \frac{x}{y} = \frac{[\alpha\text{-D}]}{[\beta\text{-D}]} = 0.57 : 1$

Specific Rotation = $\frac{+1.2^\circ}{0.5 \text{ dm} \times \frac{6.15 \text{ g}}{100 \text{ ml}}}$
 $= 39.02^\circ$

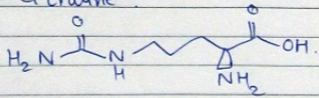
5) Osazone Formation



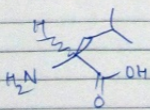
6) Wahl Degradation.



7) L-Citrulline.



Leucine.



Isoleucine.

