

LISTA Nº 2

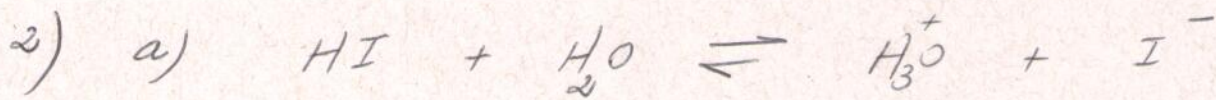
1) TEORIA ARRHENIUS Ácido $\Rightarrow$ produz H_3O^+
base $\Rightarrow$ produz OH^-

TEORIA BRÖNSTED - LOWRY Ácido $\Rightarrow$ doador H^+ (próton)
base $\Rightarrow$ receptor H^+ (próton)

TEORIA LEWIS

Ácido : recebe / coordena par eletrons $^{..}$ / ELETRÓFILO

Base : doa / par eletrons $^{..}$ / NUCLEÓFILO



ác. iodídrico

iodeto
(base conjugada)

$$K_a = \frac{[H_3O^+][I^-]}{[HI]} \gg 1$$

$$pK_a = -10$$

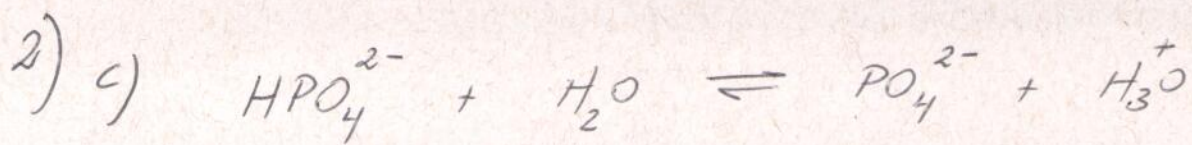


di-hidrogênio
fosfato
(ác.)

hidrogênio fosfato
(base conj.)

$$K_a = \frac{[H_3O^+][HPO_4^{2-}]}{[H_2PO_4^-]}$$

$$pK_a = 7,2$$

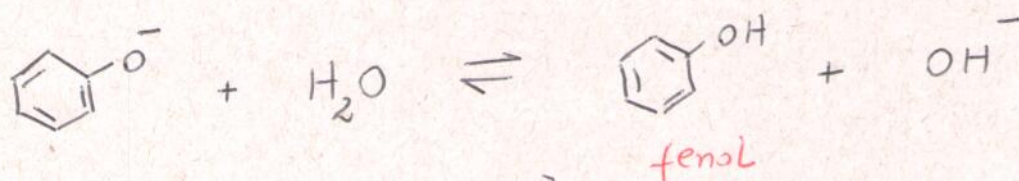
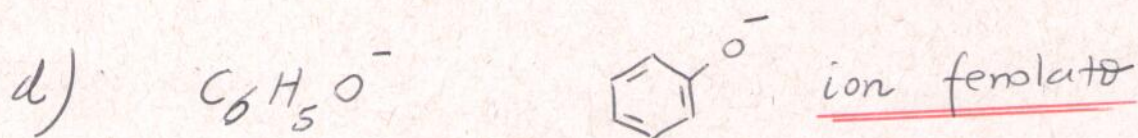


hidrogeno
fosfato

fosfato
(base conj.)

$$K_a = \frac{[\text{PO}_4^{3-}][\text{H}_3\text{O}^+]}{[\text{HPO}_4^{2-}]}$$

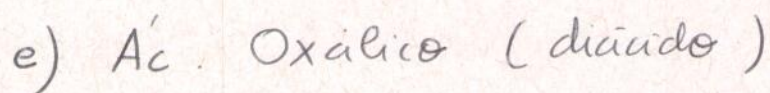
$$\text{p}K_a = 12,7$$



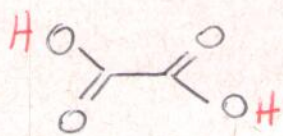
$$K_b = \frac{[\text{fenol}][\text{OH}^-]}{[\text{fenolato}]}$$

$$\text{p}K_a = 10,0$$

Assim: $\text{p}K_b = \text{p}K_w - \text{p}K_a = 14 - 10 = 4,0$



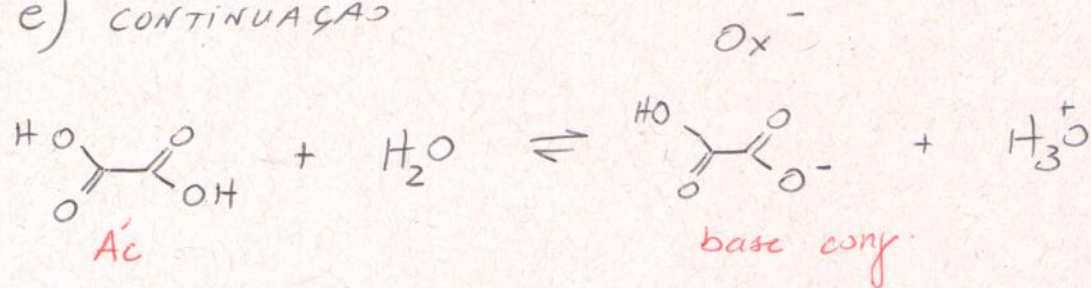
$$\text{p}K_{a1} = 1,25$$



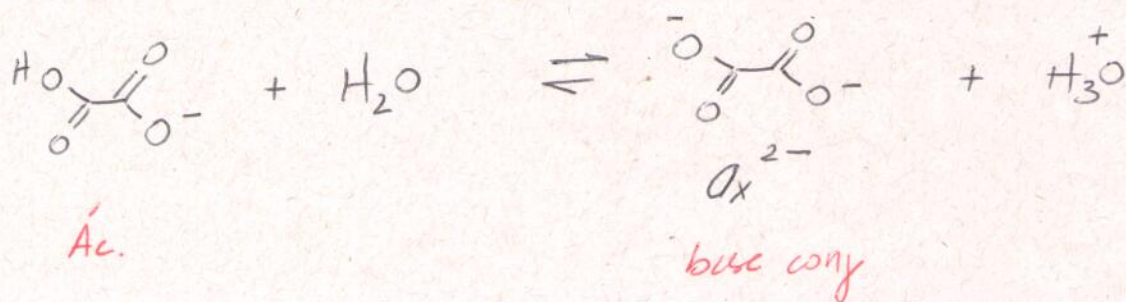
$$\text{p}K_{a2} = 4,23$$

Ác. Ox

2) e) CONTINUAÇÃO

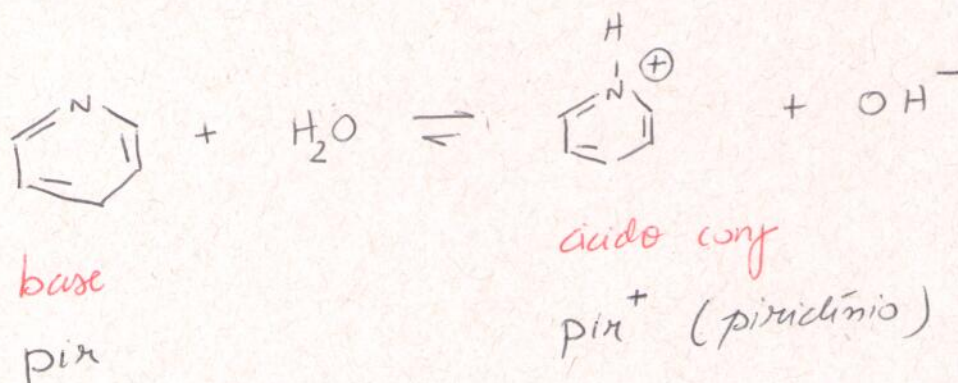


$$K_{a1} = \frac{[\text{Ox}^-][\text{H}_3\text{O}^+]}{[\text{AcOx}]} \Rightarrow \text{p}K_{a1} = 1,25$$



$$K_{a2} = \frac{[\text{Ox}^{2-}][\text{H}_3\text{O}^+]}{[\text{Ox}^-]} \Rightarrow \text{p}K_{a2} = 4,23$$

f) Piridina



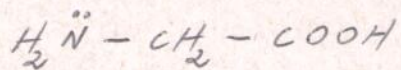
$$K_b = \frac{[\text{pir}^+][\text{OH}^-]}{[\text{pir}]} ; \quad \text{p}K_a = 5,2$$

$$\text{p}K_b = \text{p}K_w - \text{p}K_a = 14 - 5,2 = 8,8$$

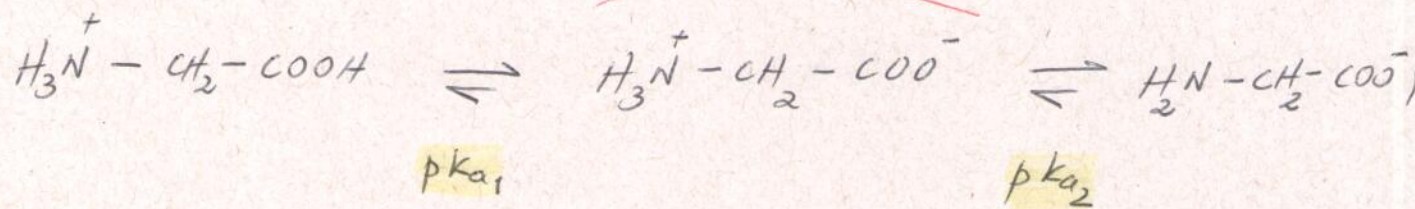
2)

g)

Glycine



Zwitterion



2,3

9.6