Acid and Bases | Notes

Definitions to learn

Bronsted Acid: A proton donor

Bronsted base: A proton acceptor

Conjugate acid: Substance formed when a base accepts a proton

Strong acid: One that completely dissociates in solution. (e.g. Hydrochloric acid)

Weak acid One that only slightly dissociates in solution (e.g. Ethanoic acid)

Conjugate base: A substance formed when an acid donates a proton

Strong base: One that completely dissociates in water to produce OH^- ions

Weak base: One that only slightly dissociates in water

Conjugate acid-base pair: Any acid base pair that differs by one proton.

Amphoteric: A substance that can be an acid or a base in a chemical reaction.

Indicators: Coloured dyes that change colour depending on the pH they are exposed to.

Monoprotic: Monobasic, Donates one proton.

Possible questions

1). Find PH

$pH = -Log[H^+]$	Usually this formula will get you 6 out of the 9 marks going for the question.
$pH = -Log_{10}[0.2M]$	Next Sub in the given Moles per litre for the H^+ and this will give you a pH value

2).Calculate the volume of acid required to neutralise the given volume of base

Given:

$V_a = X$ $\quad V_b = 25cm^3$

$M_a = 0.20\ M$ $\quad M_b = 0.08\ M$

$N_a = 2$ $\quad N_b = 1$

$$\frac{V_a M_a}{N_a} = \frac{V_b M_b}{N_b}$$

$$\frac{V_a(0.20M)}{2} = \frac{(25cm^3)(0.08M)}{1}$$

$$V_a = 20cm^3$$

3). Identify the species acting as the acid in this chemical equation

Accepts H^+ ion

$$H_2O + HF \leftrightarrow H_3O^+ + F^-$$

Donates H^+ ion