The Practise Ground

Class 11 Chemistry

Chemical Equilibrium

K, Q and Le Chatelier's principle

1

Kc = [C]^c [D]^d / [A]^a [B]^b

Equilibrium constant

For aA + bB and cC + dD. Pure solids and liquids are left out.

2

Kp = Kc (RT)^Δn

Kp and Kc

Δn = moles of gaseous products − moles of gaseous reactants

3

Q < K

The reaction moves forward

If Q > K it moves backward. If Q = K it is at equilibrium.

4

pH = pKa + log ([salt] / [acid])

Henderson equation (buffers)

A buffer works best when pH is close to pKa

Remember

Le Chatelier: a system at equilibrium opposes any change you impose on it.

A catalyst speeds up both directions equally. It does not change K.

Quick example

$N_2 + 3H_2$ gives $2NH_3$ (all gases).

Δn = 2 − 4 = −2

Kp = Kc (RT)^−2

Think you've got it? Test yourself.

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