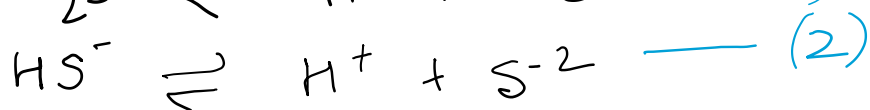
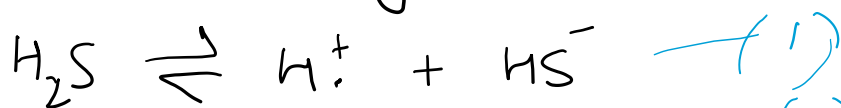


K_{a1} , K_{a2} , K_{a3} are respective ionisation constants for the following reactions:



The correct relationship between the constants is:

(a) $K_{a3} = K_{a1} \times K_{a2}$

(b) $K_{a3} = K_{a1} + K_{a2}$

(c) $K_{a3} = K_{a1} - K_{a2}$

(d) $K_{a3} = K_{a1} / K_{a2}$

Sol. We observe that (1) + (2) = (3).

So, $K_{a1} \times K_{a2} = K_{a3}$.

Note. When two reactions are added to get a third reaction, the equilibrium constant of the third reaction is equal to the product of equilibrium constants of the two reactions.

⇒ option (a).