

18. Which of the following sets of equations corresponds correctly to the acid-base theory of the chemist/s who proposed it?

	Chemist/s	Equations
(a)	Johannes Brønsted and Thomas Lowry	$\text{H}^+(\text{aq}) + \text{OH}^-(\text{aq}) \rightarrow \text{H}_2\text{O}(\ell)$
	Humphry Davy	$\text{HNO}_3(\text{aq}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{H}_3\text{O}^+(\text{aq}) + \text{NO}_3^-(\text{aq})$
	Svante Arrhenius	$\text{HC}_2\text{H}_3\text{O}_2(\text{aq}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{C}_2\text{H}_3\text{O}_2^-(\text{aq}) + \text{H}_3\text{O}^+(\text{aq})$
(b)	Johannes Brønsted and Thomas Lowry	$\text{HC}_2\text{H}_3\text{O}_2(\text{aq}) + \text{CH}_3\text{OH}(\text{aq}) \rightleftharpoons \text{CH}_3\text{OH}_2^+(\text{aq}) + \text{C}_2\text{H}_3\text{O}_2^-(\text{aq})$
	Humphry Davy	$\text{H}^+(\text{aq}) + \text{OH}^-(\text{aq}) \rightarrow \text{H}_2\text{O}(\ell)$
	Svante Arrhenius	$\text{NH}_3(\text{g}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{NH}_4^+(\text{aq}) + \text{OH}^-(\text{aq})$
(c)	Johannes Brønsted and Thomas Lowry	$\text{HCl}(\text{aq}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{H}_3\text{O}^+(\text{aq}) + \text{Cl}^-(\text{aq})$
	Humphry Davy	$\text{H}_3\text{O}^+(\text{aq}) + \text{OH}^-(\text{aq}) \rightarrow 2 \text{H}_2\text{O}(\ell)$
	Svante Arrhenius	$\text{HNO}_3(\text{aq}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{H}_3\text{O}^+(\text{aq}) + \text{NO}_3^-(\text{aq})$
(d)	Johannes Brønsted and Thomas Lowry	$\text{NH}_3(\text{aq}) + \text{CH}_3\text{OH}(\text{aq}) \rightleftharpoons \text{CH}_3\text{O}^-(\text{aq}) + \text{NH}_4^+(\text{aq})$
	Humphry Davy	$2 \text{HCl}(\text{aq}) + \text{Mg}(\text{s}) \rightarrow \text{H}_2(\text{g}) + \text{Mg}^{2+}(\text{aq}) + 2\text{Cl}^-(\text{aq})$
	Svante Arrhenius	$\text{NaOH}(\text{s}) \rightarrow \text{Na}^+(\text{aq}) + \text{OH}^-(\text{aq})$