Acids, Bases and Salts

CHEM

Name _____ Class _____ Date _____

1 Which **acid-base pair** will always undergo a reaction that produces a **neutral solution**?

A a weak acid and a weak base
B a weak acid and a strong base
C a strong acid and a weak base
D a strong acid and a strong base

2 Given the **equilibrium** system:

$NH_3(aq) + H_2O(l) \rightleftharpoons NH_4^+(aq) + OH^-(aq)$

According to the Brönsted-Lowry theory, the $H_2O(l)$ acts as

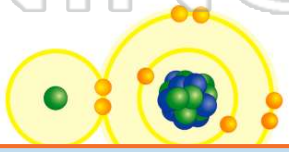
A a base, by receiving a proton
B a base, by donating a proton
C an acid, by receiving a proton
D an acid, by donating a proton

3 How many milliliters of 0.010 M NaOH are required to **exactly neutralize** 20.0 milliliters of 0.020 M HCl?

A 10 mL
B 20 mL
C 30 mL

4 Which of the following is the **weakest Brönsted-Lowry acid**?

A H_2SO_4
B HNO_3
C HF
D HI



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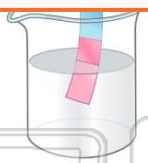
C H_3O^+ (aq) ions
D SO_4^{2-} (aq) ions



B reduction
C hydrolysis
D neutralization

9 An **electrochemical setup** consists of two half-cells, an anode, a cathode, an external circuit, and a salt bridge. When a reaction occurs, **ion migration** takes place through the

A anode
B cathode
C salt bridge
D external circuit

10 According to the **Brönsted-Lowry theory**, an **acid** is any species that

A releases hydroxide ions into solution
B releases oxide ions into solution
C donates protons to another species
D accepts protons from another species

ANSWER KEY

Which **acid-base pair** will always undergo a reaction that produces a **neutral solution**?

A a weak acid and a weak base
B a weak acid and a strong base
C a strong acid and a weak base
D a strong acid and a strong base

d

Given the **equilibrium** system:

$NH_3(aq) + H_2O(l) \rightleftharpoons NH_4^+(aq) + OH^-(aq)$

According to the Brönsted-Lowry theory, the $H_2O(l)$ acts as

A a base, by receiving a proton
B a base, by donating a proton
C an acid, by receiving a proton
D an acid, by donating a proton

d

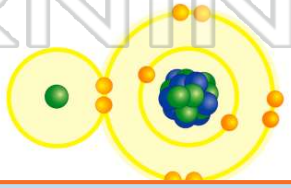
How many milliliters of 0.010 M NaOH are required to **exactly neutralize** 20.0 milliliters of 0.020 M HCl?

A 10 mL
B 20 mL
C 30 mL
D 40 mL

d

Which of the following is the **weakest Brönsted-Lowry acid**?

A H_2SO_4
B HNO_3
C HF
D HI



c

D SO_4^{2-} (aq) ions

C hydrolysis
D neutralization

An **electrochemical setup** consists of two half-cells, an anode, a cathode, an external circuit, and a salt bridge. When a reaction occurs, **ion migration** takes place through the

A anode
B cathode
C salt bridge
D external circuit

c

According to the **Brönsted-Lowry theory**, an **acid** is any species that

A releases hydroxide ions into solution
B releases oxide ions into solution
C donates protons to another species
D accepts protons from another species

c