Chemistry 12

Brønsted-Lowry Acid-Base Worksheet

Name:
Date:
Block:

1. Write the formula for a ***proton***.

2. Write the formula for a ***hydrated proton***.

3. Write the formula for a ***hydronium*** ion.

4. Give the ***Arrhenius*** definition of an ***acid***.

5. Give the ***Arrhenius*** definition of a ***base***.

6. Give the ***Bronsted-Lowry*** definition of an ***acid***.

7. Give the ***Bronsted-Lowry*** definition of a ***base***.

8. Given the equation: $HCO_3^- + H_2S \rightleftharpoons H_2CO_3 + HS^-$

   a) The **acid** on the left side is

   b) The **base** on the left side is

   c) The **acid** on the right side is

   d) The **base** on the right side is

9. Find the ***conjugate acids*** of each of the following bases:

   a) HPO_4^{2-}

   b) PO_4^{3-}

   c) HSO_4^-

   d) NH_3

   e) $H_2PO_4^-$

10. Find the ***conjugate bases*** of each of the following:

a) $H_2PO_4^-$

b) H_3PO_4

c) HSO_4^-

d) H_2O

e) HPO_4^{2-}

11. Give the formulas of a conjugate acid/base pair in which the ***dihydrogen citrate ion ($H_2C_6H_5O_7^-$) is the <u>conjugate base</u>***.

Conjugate acid _____ Conjugate base _____

12. Give the formulas of a conjugate acid/base pair in which the ***dihydrogen citrate ion is the <u>conjugate acid</u>***.

Conjugate acid _____ Conjugate base _____

13. Is the dihydrogen citrate ion ***amphiprotic***? Explain your answer.