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| Bronsted Lowry Definiton of Acids  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues,&Thurs after school! | B | Name\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_ |

Write the definition of each:

1. Arrhenius Acid
2. Arrhenius Base
3. Bronsted Acid
4. Bronsted Base

Mark each as (1) acid only (2) base only (3) both acid and base (4) true for pure water (5) none of these choices is true

1. \_\_\_\_\_ has lots of OH- , less H3O+
2. \_\_\_\_\_ has **no** ions
3. \_\_\_\_\_ is considered an electrolyte
4. \_\_\_\_\_ H2SO4
5. \_\_\_\_\_ can turn indicator paper various colors
6. \_\_\_\_\_ turns phenolphthalein pink
7. \_\_\_\_\_ tastes bitter
8. \_\_\_\_\_ feels slippery on skin
9. Write the reaction showing the ionization of water to produce two ions. Remember to show a + or – on any ions.

\_\_\_\_\_\_ + \_\_\_\_\_\_ \_\_\_\_\_\_ + \_\_\_\_\_\_

1. Write the reaction showing the reaction of hydroxide with hydronium to produce two water molecules. Remember to show a “+” or “– “ on any ions.

\_\_\_\_\_\_ + \_\_\_\_\_\_ \_\_\_\_\_\_ + \_\_\_\_\_\_

1. What happens to the hydroxide concentration in water when acid is added?

( it rises / it falls / it doesn’t change )

1. What happens to the hydronium concentration in water when acid is added?

( it rises / it falls / it doesn’t change )

1. What happens to the hydroxide concentration in water when base is added?

( it rises / it falls / it doesn’t change )

1. What happens to the hydronium concentration in water when base is added?

( it rises / it falls / it doesn’t change )

1. The following substances act as Bronsted acids in water. Write a chemical equation for each that illustrates its reaction with water.

|  |  |
| --- | --- |
| ammonium ion, NH4+ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| H3PO4 | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| HBr | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. The following substances act as Bronsted bases in water. Write a chemical equation for each that illustrates its reaction with water.

|  |  |
| --- | --- |
| CHOO– | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| hydride ion: H- | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| ammonia NH3 | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

class notes

In the each case below, redraw the molecules of the aqueous solution in the first box into the second box with the following changes:

* add ten HOH water molecules.
* show each ion or molecule as its formula, not as a circle.
* draw charges on anything that is an ion
* answer the first two questions in the third box

|  |  |  |
| --- | --- | --- |
|  |  | 1. which are there more of?   ( ions / neutral molecules )   1. which ion is there more of?   ( OH- / H3O+ / H+)   1. turns indicator paper which color?   ( blue / red )   1. pH is ( <7 / 7 / >7 ) 2. conducts electricity? ( yes / no ) |

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finish and get a stamp