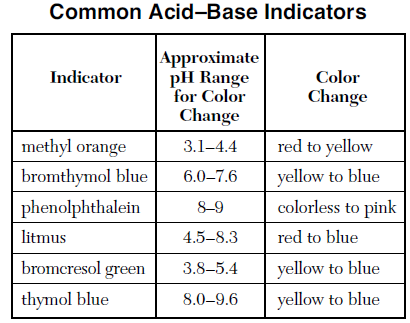
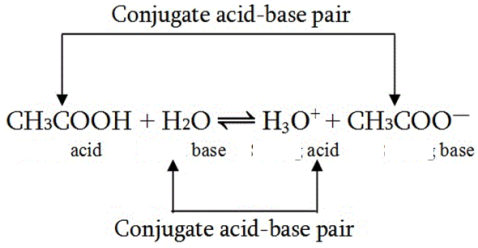
|  |  |  |
| --- | --- | --- |
| Conjugate Acids + Indicators  EHS Cλ3MIs+rγ  Mr. Genest | img699.jpg  Andrew’s car | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  . |

1. In each case below for any substance on the LEFT side of the arrow, mark it as follows: circle any acid, underline any base, cross out anything that is neither an acid nor a base. (If you are stuck, look at the example on Question #10)
   1. HSO4- + H2O --> SO42- + H3O+
   2. H2O + NH3 🡪 OH- NH4+
   3. H3PO4 + NH3 🡪 NH4+ + H2PO4-
   4. H2PO4- + H2O 🡪 HPO42- H3O+
2. What color is phenolphthalein in very basic solution?
3. A sample of a solution with a pH of 10 is tested separately with phenolphthalein and litmus indicator. The colors of the indicators are as follows (choose only one letter )
   1. litmus is blue; phenolphthalein is pink
   2. litmus is red; phenolphthalein is pink
   3. litmus is blue; phenolphthalein is colorless
   4. litmus is red; phenolphthalein is colorless
4. What color is phenolphtalein in a beaker full of concentrated H2SO4?
5. A blue solution containing an acid-base indicator was tested with a pH meter and found to have a pH of 5.5. Which of the indicators shown on the table above could be this indicator?
6. A solution was yellow in bromthymol blue and blue in bromcresol green. According to the table here, what could be the pH of this solution?
7. Acid was added to a solution containing an indicator until the solution turned from blue to yellow. Which of the following would be the most acidic?
8. a yellow solution containing bromthymol blue
9. a yellow solution containing bromcresol green
10. a yellow solution containing thymol blue
11. Complete and balance the neutralization reaction for
    1. HI neutralizing Mg(OH)2
    2. Al(OH)3 is mixed with HCH3COO
12. If NH3 is a base, what is its conjugate acid?
13. Using this diagram as a model, draw a complete reaction for each pair below. Label them with the arrows and all of the words shown in this diagram

Ca(OH)2 reacting with HCHOO

1. If a beaker contains 0.00000593 moles of H+ ions, in 30.0 L of water,
2. What is the [H+]?
3. what is the pH?
4. If a beaker contains 4.89x1014 H+ ions, in 0.790 liters of water,
5. What is the [H+]?
6. what is the pH?
7. find the number of H+ ions that would be in a 690.mL (units!) volume of a solution that had the same molarity you found in answer A.
8. In each case below for any substance on the LEFT side of the arrow, mark it as follows: circle any acid, underline any base, cross out anything that is neither an acid nor a base.
   1. SO42- + H3O+ 🡪 HSO4- + H2O
   2. NH4+ + H2PO4- 🡪H3PO4 + NH3