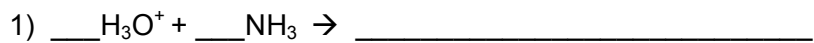


Name _____

Acid Base Groupwork: Use your BL reference handout to complete the following equations. Label the A, B, CA, and CB. Then draw the arrow showing which way the reaction will proceed.



Name all of the acids (not the conjugate acids) in the above equations.

1) _____ 2) _____

3) _____ 4) _____

5) _____

Define amphoteric - _____

Write two equations, the first with water acting as an acid, and the second with water acting as a base.

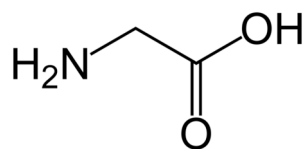
6) _____

7) _____

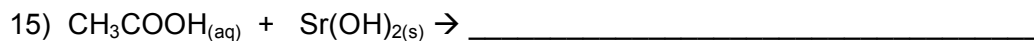
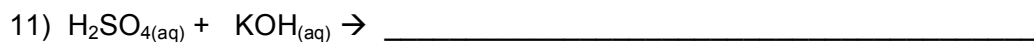
8) What does an acidic hydrogen do? Why is the hydrogen in an organic acid functional group acidic while a hydrogen in an alcohol group is not acidic? Draw diagrams to illustrate your point.

9) Why is nitrogen usually able to accept a proton? Draw a nitrogen and show where the H^+ would attach? Does this make nitrogen containing compounds acids or bases?

10) Look at the following amino acid glycine. An amine group is a nitrogen with a lone pair, and an acid group is the -COOH group. Identify the amine and the acid group on the molecule. Is this molecule acidic, basic or amphoteric?



NEUTRALIZATION REACTIONS (Arrhenius) - write products and balance the following reactions:



Single Replacement Reactions - write products if the reaction proceeds, if not write NR



20) How is a strong acid different from a weak acid? Give an example of both.

Formulas: Write formulas for the following acids: (use only your ion sheet, not the new ref HO)

21) carbonic acid _____

22) iodic acid _____

23) sulfurous acid _____

24) hydrosulfuric acid _____

25) phosphorous acid _____

26) acetic acid _____

Names: Write names for the following acids: (use only your ion sheet, not the new ref HO)

27) HBr _____

28) H_2SO_4 _____

29) HClO_4 _____

30) HF _____

30) HCOOH _____

31) HNO_2 _____

32) Look at this citric acid molecule. How many organic acid groups are present? How many alcohol groups are present? Can you know if this acid is strong or weak based on the number of acidic hydrogens?

