

1) Which of the following, when dissolved in water, is the worst conductor of electricity?
1) HNO_3 2) HCl 3) H_2SO_4 4) CH_3COOH

2) Which of the following is a nonelectrolyte?
1) KNO_3 2) NH_3 3) $\text{C}_6\text{H}_{12}\text{O}_6$ 4) H_2SO_4

Given: an aqueous solution in which $[\text{H}^+] = 1.0 \times 10^{-3} \text{ M}$.

Answer questions 3-5 based on this solution.

3) What is the pH of this solution?
1) 1.0 2) 11 3) 3 4) -3

4) What will be the color of litmus in this solution?
1) red 2) blue 3) pink 4) colorless

5) What is the $[\text{OH}^-]$ in this solution?
1) $1.0 \times 10^{-3} \text{ M}$ 2) $1.0 \times 10^{-11} \text{ M}$ 3) 11.0 M 4) 3.0 M

6) What is the name of the salt formed when nitric acid reacts with potassium hydroxide?
potassium_____ 1) nitroxide 2) nitride 3) nitrate 4) nitrite

7) Which of the following oxides is ACIDIC ?
1) Na_2O 2) NO_2 3) MgO 4) BaO

8) How many ml of a 0.20 M solution of KOH are required to completely neutralize 50 ml of a 0.10 M solution of HF ?
1) 5 2) 10 3) 25 4) 50

9) Which of the following is the STRONGEST ACID?
1) H_3PO_4 2) H_2CO_3 3) $\text{HC}_2\text{H}_3\text{O}_2$ 4) HNO_3

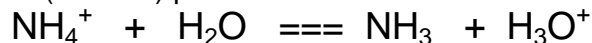
10) What is the concentration of H_3O^+ in a neutral solution?
1) 10^{-3} M 2) 10^{-4} M 3) 10^{-7} M 4) 10^{-10} M

11) Which of the following is amphiprotic ?
1) NO_3^{-1} 2) O^{-2} 3) H_2O 4) S^{-2}

12) Which of the following is the STRONGEST BASE? (Refer to table F)
1) KOH 2) $\text{Mg}(\text{OH})_2$ 3) $\text{Al}(\text{OH})_3$ 4) CH_3COOH

- 13) The STRONGER the ACID, the _____ the $[H^+]$, the _____ the pH.
1) smaller, lower 2) smaller, higher 3) greater, lower 4) greater, higher

Questions (14 & 15) pertain to the reaction below.



- 14) The 2 Bronsted acids in this reaction are
1) NH_4^+ , NH_3 2) H_2O , H_3O^+ 3) NH_4^+ , H_3O^+ 4) H_2O , NH_3
- 15) An acid/base conjugate pair in this reaction is
1) NH_4^+ , H_2O 2) NH_3 , H_3O^+ 3) NH_4^+ , NH_3 4) H_2O , NH_3

-
- 16) What is the pH range of a solution that turns methyl orange, yellow, and turns bromthymol blue, yellow?
1) 3.2 to 4.4 2) 6.0 to 7.6 3) 4.4 to 6.0 4) 3.2 to 7.6

Given: two solutions, one at pH =8 and, the other at pH =11.

Answer questions 17 & 18 based on these solutions.

- 17) Which solution has a greater $[H^+]$?
1) pH = 8 2) pH =11 3) They have the same $[H^+]$ 4) There's not enough information to tell.
- 18) How many times greater?
1) 10 2) 30 3) 100 4) 1000
-
- 19) Which of the following metals would not react with HCl?
1) Cu 2) Al 3) Mg 4) Zn
- 20) Which of the following would have a BITTER taste ?
1) CH_3COOH 2) $C_6H_{12}O_6$ 3) HOH 4) $Mg(OH)_2$