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Chemistry\_Questions\_0065

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1. **018 Chapter #001**

The substance  $\text{H}_2\text{SO}_3$  is considered

Student Response

- a. a weak Arrhenius base.
- b. a strong Arrhenius acid.
- c. a strong Arrhenius base.
- d. a neutral compound.
- e. a weak Arrhenius acid.

2. **018 Chapter #005**

The substance  $\text{Ca}(\text{OH})_2$  is considered

Student Response

- a. a weak Arrhenius acid.
- b. a weak Arrhenius base.
- c. a strong Arrhenius acid.
- d. a strong Arrhenius base.
- e. a neutral compound.

3. **018 Chapter #039**

When 14.7 mL of aqueous HBr (a strong acid) was added to water, 0.482 L of a solution with a pH of 4.23 was produced. What was the molarity of the original HBr solution?

Student Response

- a.  $1.9 \times 10^{-3}$  M
- b. 140 M
- c. 0.288 M
- d. 0.13 M
- e. None of these choices is correct.

4. **018 Chapter #072**

A solution is prepared by adding 0.10 mol of lithium nitrate,  $\text{LiNO}_3$ , to 1.00 L of water. Which statement about the solution is correct?

Student Response

- a. The solution is basic.
- b. The solution is neutral.
- c. The solution is weakly acidic.
- d. The solution is strongly acidic.
- e. The values for  $K_a$  and  $K_b$  for the species in solution must be known before a prediction can be made.

5. **018 Chapter #011**

The substance  $(\text{CH}_3\text{CH}_2)_2\text{NH}$  is considered

Student Response

- a. a weak acid.
- b. a weak base.
- c. a strong acid.
- d. a strong base.
- e. a neutral compound.

6. **018 Chapter #048**

Butyric acid is responsible for the odor in rancid butter. A solution of 0.25 M butyric acid has a pH of 2.71. What is the  $K_a$  for the acid?

Student Response

- a. 0.36
- b.  $2.4 \times 10^{-2}$
- c.  $7.8 \times 10^{-3}$
- d.  $1.5 \times 10^{-5}$
- e. None of these choices is correct.

7. **018 Chapter #057**

Arsenic acid,  $\text{H}_3\text{AsO}_4$ , is used industrially to manufacture insecticides. Arsenic acid is a polyprotic acid with  $K_1 = 2.5 \times 10^{-4}$ ,  $K_2 = 5.6 \times 10^{-8}$ , and  $K_3 = 3 \times 10^{-13}$ . What is the concentration of the  $\text{HAsO}_4^{2-}$  in a solution whose initial arsenic acid concentration was 0.35 M ?

Student Response

- a.  $9.4 \times 10^{-3}$  M
- b.  $2.5 \times 10^{-4}$  M
- c.  $8.8 \times 10^{-5}$  M
- d.  $5.6 \times 10^{-8}$  M
- e. None of these choices is correct.

8. **018 Chapter #023**

Which of the following liquids contains the strongest acid?

Student Response

- a. 0.1 M HA, pH = 6.85
- b. 0.1 M HD, pH = 7.22
- c. 0.1 M HE, pH = 8.34
- d. 0.1 M HJ, pH = 11.88
- e. pure water

9. **018 Chapter #091**

Arrhenius bases raise the hydroxide ion concentration when dissolved in water.

Student Response

- a. TRUE
- b. FALSE

10. **018 Chapter #098**

All weak acids have strong conjugate bases.

Student Response

- a. TRUE
- b. FALSE

