

## Exercise 7.72 – Making buffer solutions

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**Q772-01** Which salt will produce the most alkaline solution when dissolved in water?

- A.  $\text{KNO}_3$
  - B.  $\text{MgCl}_2$
  - C.  $\text{CH}_3\text{COONa}$
  - D.  $(\text{NH}_4)_2\text{SO}_4$
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**Q772-02** Which salt would form a neutral solution when dissolved in water?

- A.  $\text{FeCl}_3$
  - B.  $\text{Na}_2\text{CO}_3$
  - C.  $\text{KBr}$
  - D.  $\text{NH}_4\text{NO}_3$
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**Q772-03** When the following three  $1.0 \text{ mol dm}^{-3}$  aqueous solutions are arranged in order of increasing pH, which is the correct order?

- I. Ammonium chloride
- II. Ammonium ethanoate
- III. Sodium ethanoate

- A. I, II, III
  - B. II, I, III
  - C. III, I, II
  - D. III, II, I
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**Q772-04** Which salt produces an acidic solution when dissolved in water?

- A.  $\text{C}_2\text{H}_3\text{O}_2\text{Na}$
  - B.  $\text{Li}_3\text{PO}_4$
  - C.  $\text{AlCl}_3$
  - D.  $\text{KNO}_3$
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**Q772-05** Which aqueous solution should be neutral?

- A.  $\text{NH}_4\text{Cl}$
  - B.  $\text{Na}_2\text{SO}_4$
  - C.  $\text{KCN}$
  - D.  $\text{NaHSO}_4$
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**Q772-06** Which substance, when added to water, will not change the pH?

- A.  $\text{NaHCO}_3$
  - B.  $\text{NH}_4\text{Cl}$
  - C.  $\text{KCN}$
  - D.  $\text{KCl}$
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**Q772-07** Which salt will produce an acid solution when dissolved in water?

- A.  $\text{NH}_4\text{Cl}$
  - B.  $\text{NaCN}$
  - C.  $\text{NH}_4\text{CN}$
  - D.  $\text{NaCl}$
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**Q772-08** Which solution has pH value above 7.00?

- A. 0.10 M KCl
  - B. 0.10 M  $\text{NH}_4\text{NO}_3$
  - C. 0.10 M KCN
  - D. 0.10 M HI
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**Q772-09** Which of the following compounds has the lowest pH when dissolved in water (assume solutions of the same concentration):

- A. 0.10 M  $\text{CuCl}_2$
  - B. 0.10 M  $\text{FeCl}_2$
  - C. 0.10 M  $\text{FeCl}_3$
  - D. 0.10 M  $\text{ZnCl}_2$
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**Q772-10** Aluminium sulphate solution is used in fire extinguishers to make carbon dioxide foam by reaction with sodium carbonate solution and detergent. Explain why this is a neutralisation reaction.

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