

- 1 You are preparing to mix aqueous solutions of sodium phosphate and calcium nitrate. Firstly, what is the chemical formula of sodium phosphate?
  - A  $\text{NaPO}_4$
  - B  $\text{Na}_2\text{PO}_4$
  - C  $\text{Na}_3\text{PO}_4$
  - D None of the above
- 2 Secondly, what is the chemical formula of calcium nitrate?
  - A  $\text{CaNO}_3$
  - B  $\text{Ca}(\text{NO}_3)_2$
  - C  $\text{Ca}_2(\text{NO}_3)_3$
  - D None of the above
- 3 Finally, when the aqueous solutions of sodium phosphate and calcium nitrate are mixed, a precipitate forms. What is the chemical formula of that precipitate?
  - A  $\text{Na}_3\text{PO}_4$
  - B  $\text{Ca}(\text{NO}_3)_2$
  - C  $\text{NaNO}_3$
  - D  $\text{Ca}_3(\text{PO}_4)_2$
- 4 The  $\text{Na}_3\text{PO}_4(\text{aq})$  solution that you prepared is 0.10 M and has a volume of 100 mL. How many moles of  $\text{Na}^+(\text{aq})$  are in the solution?
  - A 0.1
  - B 0.01
  - C 0.3
  - D 0.03
  - E None of the above
- 5 What is the balanced net ionic chemical equation for the reaction between sodium phosphate and calcium nitrate?
  - A  $\text{Na}_3\text{PO}_4(\text{aq}) + \text{Ca}(\text{NO}_3)_2(\text{aq}) \rightarrow \text{Ca}_3(\text{PO}_4)_2(\text{s}) + \text{NaNO}_3(\text{aq})$
  - B  $2 \text{Na}_3\text{PO}_4(\text{aq}) + 3 \text{Ca}(\text{NO}_3)_2(\text{aq}) \rightarrow \text{Ca}_3(\text{PO}_4)_2(\text{s}) + 6 \text{NaNO}_3(\text{aq})$
  - C  $\text{PO}_4^{3-}(\text{aq}) + \text{Ca}^{2+}(\text{aq}) \rightarrow \text{Ca}_3(\text{PO}_4)_2(\text{s})$
  - D  $2 \text{PO}_4^{3-}(\text{aq}) + 3 \text{Ca}^{2+}(\text{aq}) \rightarrow \text{Ca}_3(\text{PO}_4)_2(\text{s})$
- 6 When aqueous solutions of calcium chloride and sodium sulfate are mixed, a precipitate forms. What is the ionic compound that precipitates?
  - A  $\text{NaCl}$
  - B  $\text{CaSO}_4$
  - C  $\text{CaCl}_2$
  - D None of the above

- 7 When aqueous solutions of calcium chloride and sodium sulfate are mixed, a precipitate forms. Will the resulting solution conduct electricity?
- A Yes
  - B No
  - C Further information needed