



# Chemical Changes

## Multiple Choice Questions

### Set 3

Tick **one** box.

1. What is the general equation for the reaction between an acid and a metal?
  - A. acid + metal  $\rightarrow$  salt + hydrogen ☐
  - B. acid + metal  $\rightarrow$  salt + water ☐
  - C. acid + metal  $\rightarrow$  salt + water + carbon dioxide ☐
  - D. acid + metal  $\rightarrow$  salt ☐
  
2. Which of the following is related to the reactivity of a metal?
  - A. the tendency of the metal to form negative ions ☐
  - B. the tendency of the metal to form positive ions ☐
  - C. the tendency of the metal to neutralise an acid ☐
  - D. the tendency of the metal to neutralise an alkali ☐
  
3. Iron can be extracted from iron oxide using carbon.  
Which substance is reduced and which substance is oxidised?
  - A. carbon is oxidised and iron is reduced ☐
  - B. iron is oxidised and carbon is reduced ☐
  - C. iron and carbon are both oxidised ☐
  - D. iron and carbon are both reduced ☐
  
4. What type of salt is produced when a metal reacts with sulfuric acid?
  - A. chloride ☐
  - B. nitrate ☐
  - C. sulfate ☐
  - D. sulfide ☐
  
5. Which process is used to produce a dry sample of a soluble salt from a solution of the salt?
  - A. crystallisation ☐
  - B. distillation ☐
  - C. electrolysis ☐
  - D. filtration ☐



6. What colour is produced when universal indicator is added to a strong alkali?

- A. green ☐
- B. purple ☐
- C. red ☐
- D. yellow ☐

7. Which of the following equations represents a neutralisation reaction?

- A.  $\text{H}^+ + \text{Cl}^- \rightarrow \text{HCl}$  ☐
- B.  $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$  ☐
- C.  $\text{H}^+ + \text{SO}_4^{2-} \rightarrow \text{H}_2\text{SO}_4$  ☐
- D.  $\text{H}^+ + \text{NO}_3^- \rightarrow \text{HNO}_3$  ☐

8. Why can aluminium not be extracted from its compounds by reduction with carbon?

- A. aluminium is insoluble in water ☐
- B. aluminium is less reactive than carbon ☐
- C. aluminium is more reactive than carbon ☐
- D. aluminium is very expensive ☐

9. What happens to positive ions during electrolysis?

- A. they move randomly in all directions ☐
- B. they move towards the anode ☐
- C. they move towards the cathode ☐
- D. they stay in the middle of the two electrodes ☐

10. What is produced at the anode in the electrolysis of an aqueous solution that does not contain halide ions?

- A. carbon dioxide ☐
- B. hydrogen ☐
- C. nitrogen ☐
- D. oxygen ☐