ALBERTA SCIENCE 20 · UNIT A · 25 QUESTIONS

# Chemical Changes — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **Which of the following is an example of a chemical change?**

- A Burning a piece of wood
- B Melting an ice cube
- C Dissolving sugar in water
- D Cutting a sheet of paper

Understand It with Pulse | Flag a mistake

**2** **The pH of a neutral solution, such as pure water, is**

- A 0
- B 1
- C 7
- D 14

Understand It with Pulse | Flag a mistake

3 **A solution with a pH of 3 is classified as**

A basic

B acidic

C neutral

D metallic

Understand It with Pulse | Flag a mistake

4 **In a redox reaction, oxidation is best defined as the**

A gain of electrons

B gain of protons

C loss of protons

D loss of electrons

Understand It with Pulse | Flag a mistake

5 **A student dissolves 25 g of salt in water and makes a solution with a total volume of 500 mL. The concentration of the solution, in grams per litre (g/L), is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **Which of the following substances is basic (alkaline)?**

A Soap solution

B Vinegar

C Lemon juice

D Cola

Understand It with Pulse | Flag a mistake

**7** **Acid rain in Alberta is caused mainly by emissions of**

- **A** carbon dioxide and methane
- **B** sulfur dioxide and nitrogen oxides
- **C** chlorofluorocarbons
- **D** water vapour

Understand It with Pulse | Flag a mistake

**8** **In the reaction $Zn + Cu^{2+} \rightarrow Zn^{2+} + Cu$, the species that is oxidized is**

- **A** $Cu^{2+}$
- **B** $Zn^{2+}$
- **C** Zn
- **D** Cu

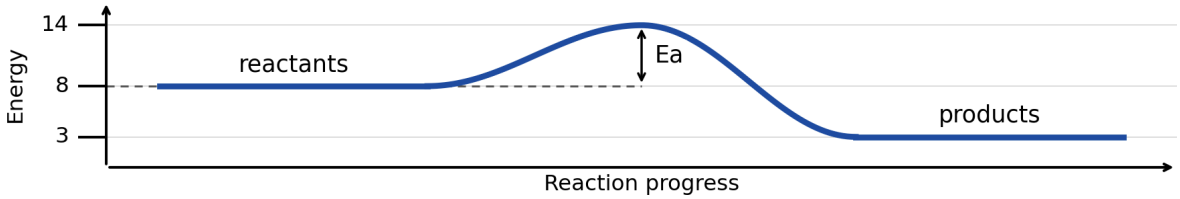
Understand It with Pulse | Flag a mistake

**9** **Solution A has a pH of 2 and solution B has a pH of 5. Solution A is _____ times more acidic than solution B.**

ANSWER

Understand It with Pulse | Flag a mistake

**10** **The energy diagram shows a chemical reaction. The reaction is**




A exothermic

B endothermic

C a physical change

D a neutralization reaction

Understand It with Pulse | Flag a mistake

11 **A steel gate will rust most quickly when it is exposed to**

A dry air

B a coating of oil

C salt water

D a coat of paint

Understand It with Pulse | Flag a mistake

12 **A water sample has a volume of 1.5 L and contains 3.0 mg of dissolved lead. The concentration of lead, in parts per million (mg/L), is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

**13** **Which of the following changes is a reduction?**

- **A** $Zn \rightarrow Zn^{2+} + 2e^-$
- **B** $Cu^{2+} + 2e^- \rightarrow Cu$
- **C** $Fe \rightarrow Fe^{3+} + 3e^-$
- **D** $Na \rightarrow Na^+ + e^-$

Understand It with Pulse | Flag a mistake

**14** **When an acid reacts with a base in a neutralization reaction, the products are**

- **A** a salt and water
- **B** an acid and a salt
- **C** hydrogen and oxygen gases
- **D** a metal and water

Understand It with Pulse | Flag a mistake

15 **A certain fuel releases 45 kJ of energy for every gram burned. The total energy released, in kilojoules, when 120 g of the fuel is burned completely is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **Galvanizing protects steel from corrosion by coating it with**

A tin

B zinc

C copper

D plastic

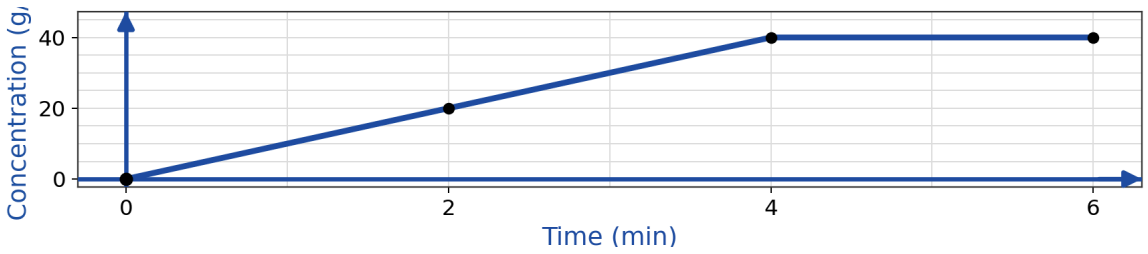
Understand It with Pulse | Flag a mistake

**17** **Most of the sulfur dioxide released into the atmosphere in industrial regions comes from**

- **A** volcanoes
- **B** vehicle air conditioners
- **C** photosynthesis
- **D** burning coal for electricity

Understand It with Pulse | Flag a mistake

**18** **The graph shows the concentration of a salt solution as salt dissolves. The concentration after 4 min, in grams per litre, is**




- **A** 20
- **B** 40
- **C** 60
- **D** 80

Understand It with Pulse | Flag a mistake

19 **The metal aluminum is extracted from its ore, bauxite, by the process of**

A distillation

B filtration

C electrolysis

D neutralization

Understand It with Pulse | Flag a mistake

20 **A catalyst increases the rate of a chemical reaction by**

A lowering the activation energy

B raising the temperature of the reaction

C being consumed in the reaction

D increasing the energy of the products

Understand It with Pulse | Flag a mistake

21 **A solution has a hydrogen ion concentration that is 100 times greater than a solution with a pH of 6. The pH of the first solution is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **Which observation is the best evidence that a chemical reaction has taken place?**

A The substance changes state

B A precipitate forms when two solutions are mixed

C The substance dissolves

D The temperature of the room changes

Understand It with Pulse | Flag a mistake

23 **A 500 mL sample of a 12 g/L solution is diluted with water to a final volume of 2.0 L. The concentration of the diluted solution, in g/L, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **In a battery that is being used to power a flashlight, energy is converted from**

A electrical to chemical

B light to chemical

C thermal to electrical

D chemical to electrical

Understand It with Pulse | Flag a mistake

25 **Acidified lakes are sometimes treated with crushed limestone (calcium carbonate) because the limestone**

A neutralizes the acid in the water

B adds nutrients for fish

C increases the oxygen content of the water

D kills algae in the lake

Understand It with Pulse | Flag a mistake

# ANSWER KEY

1. A
2. C
3. B
4. D
5. 50
6. A
7. B
8. C
9. 1000
10. A
11. C
12. 2
13. B
14. A
15. 5400
16. B
17. D
18. B
19. C
20. A
21. 4
22. B
23. 3
24. D
25. A

© 2026 Brett Robbins. All Rights Reserved.