CHEM40 · MANITOBA

CHEM40
Practice Test

Unit E: Acid-Base Theory and Reactions

25 Questions

Original practice test based on the Manitoba curriculum. Work through each question, then check your answers at the end.

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.

© 2026 Brett Robbins. All Rights Reserved.

Question 1

A sample of carbon dioxide has amount 5 moles and molar mass 44 grams per mole. Its mass, in grams, is

Understand It with Pulse Flag a mistake

Question 2

A sample of methane has mass 32 grams. Its molar mass is 16 grams per mole. The amount, in moles, is

Understand It with Pulse Flag a mistake

Question 3

An amount of 4 moles of nitrogen has molar mass 28 grams per mole. Its mass, in grams, is

Understand It with Pulse Flag a mistake

Question 4

A solution has 6 moles of solute in 1 litres. Its concentration, in moles per litre, is

Understand It with Pulse Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

Question 5

A solution *has* hydrogen *ion* concentration $10^{-}7$ moles *per* litre . *Its pH is*

Understand It with Pulse Flag a mistake

Question 6

The number of atoms in one molecule of O_2 is

Understand It with Pulse Flag a mistake

Question 7

A sample of oxygen has amount 4 moles and molar mass 32 grams per mole. Its mass, in grams, is

Understand It with Pulse Flag a mistake

Question 8

A sample of nitrogen has mass 84 grams. Its molar mass is 28 grams per mole. The amount, in moles, is

Understand It with Pulse Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

Question 9

An amount of 3 moles of hydrogen has molar mass 2 grams per mole. Its mass, in grams, is

Understand It with Pulse Flag a mistake



Question 10

A solution has 4 moles of solute in 1 litres. Its concentration, in moles per litre, is

Understand It with Pulse Flag a mistake

Question 11

A solution *has* hydrogen *ion* concentration 10^{-5} moles *per* litre . *Its pH is*

Understand It with Pulse Flag a mistake

Question 12

A sample of water has amount 6 moles and molar mass 18 grams per mole. Its mass, in grams, is

Understand It with Pulse Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

Question 13

A sample of methane has amount 4 moles and molar mass 16 grams per mole. Its mass, in grams, is

Understand It with Pulse Flag a mistake

Question 14

A sample of hydrogen has mass 8 grams. Its molar mass is 2 grams per mole. The amount, in moles, is

Understand It with Pulse Flag a mistake

Question 15

An amount of 3 moles of ammonia has molar mass 17 grams per mole. Its mass, in grams, is

Understand It with Pulse Flag a mistake

Question 16

The organ where oxygen enters the blood is the

A) lung

B) heart

C) liver

D) stomach

Understand It with Pulse Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.



Question 17

The chemical symbol for water is

A) CO_2

B) H_2O

C) O_2

D) NaCl

Understand It with Pulse | Flag a mistake

Question 18

The chemical symbol for carbon dioxide is

A) H_2O

B) O_2

C) CO_2

D) CO

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.



Question 19

The gas plants absorb from the air for photosynthesis is

A) oxygen

B) nitrogen

C) hydrogen

D) carbon dioxide

Understand It with Pulse

Flag a mistake

Question 20

The gas released by plants during photosynthesis is

A) oxygen

B) carbon dioxide

C) nitrogen

D) hydrogen

Understand It with Pulse

Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.



Question 21

An acid has a pH that is

A) equal to 7

B) less than 7

C) greater than 7

D) equal to 14

Understand It with Pulse | Flag a mistake

Question 22

A neutral solution has a pH of

A) 0

B) 14

C) 7

D) 1

Understand It with Pulse | Flag a mistake

Question 23

The force that pulls objects toward Earth is

A) friction

B) magnetism

C) inertia

D) gravity

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

Question 24

The unit of force is the

A) newton

B) joule

C) watt

D) pascal

Understand It with Pulse

Flag a mistake

Question 25

The unit of energy is the

A) newton

B) joule

C) watt

D) volt

Understand It with Pulse

Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

ANSWER KEY

1. 220
2. 2
3. 112
4. 6
5. 7
6. 2
7. 128
8. 3
9. 6
10. 4
11. 5
12. 108
13. 64
14. 4
15. 51
16. A
17. B
18. C
19. D
20. A
21. B
22. C
23. D
24. A
25. B

© 2026 Brett Robbins. All Rights Reserved.