CHEMISTRY · ALASKA

Chemistry
Practice Test

Unit 1: Matter and Atomic Structure

25 Questions

Original practice test based on the Alaska 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.

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Question 1

Which particle has a positive charge

A) Proton

B) Neutron

C) Electron

D) Nucleus

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Question 2

A neutral atom has 17 protons. The number of electrons it has is

A) 7

B) 17

C) 34

D) 18

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Question 3

Bromine – 79 has atomic number 35. The number of neutrons in this atom is ____

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Question 4

Isotopes of an element have the same number of

A) neutrons but different numbers of protons

B) electrons but different numbers of protons

C) protons but different numbers of neutrons

D) protons and neutrons in every case

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Question 5

Calcium has atomic number 20. The number of electrons in Ca^{2+} is ____

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Question 6

Elements in group 18 are called the

A) alkali metals

B) halogens

C) transition metals

D) noble gases

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Question 7

Going across a period from left to right, atomic radius generally

A) decreases

B) increases

C) stays the same

D) falls to zero

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Question 8

A sample has mass 96 g and volume 32 cm^3. Its density, in grams per cm^3, is ____

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Question 9

The electron arrangement of an oxygen atom is

A) 2, 8

B) 2, 6

C) 2, 4

D) 2, 8, 6

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Question 10

Which of these is a chemical change

A) melting butter

B) dissolving sugar

C) cooking an egg

D) breaking glass

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Question 11

Using whole number atomic masses ($Na = 23$, $Cl = 35$), the molar mass of sodium chloride, in grams per mole, is ____

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Question 12

Which of these is a heterogeneous mixture

A) salt water

B) air

C) sugar dissolved in water

D) oil and water

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Question 13

A cation forms when a neutral atom

A) loses electrons

B) gains electrons

C) gains protons

D) loses neutrons

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Question 14

An atom has 34 protons and 45 neutrons. Its mass number is ____

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Question 15

In the Bohr model of the atom, electrons are described as

A) orbiting inside the nucleus

B) occupying energy levels around the nucleus

C) mixed with protons in shells

D) fixed in the nucleus

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Question 16

Which of these is a property of metals

A) dull and brittle

B) poor conductors of heat

C) malleable and good conductors

D) gases at room temperature

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Question 17

The maximum number of electrons in the second energy level is ____

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Question 18

The element in group 1 and period 3 is

A) sodium

B) potassium

C) lithium

D) hydrogen

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Question 19

Which of these is a physical property

A) flammability

B) reactivity with acid

C) density

D) acidity

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Question 20

A sample has mass 150 g and density 5 g per cm^3. Its volume, in cm^3, is ____

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Question 21

Phosphorus is in group 15. The number of valence electrons it has is

A) 3

B) 5

C) 7

D) 8

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Question 22

Water is a compound because it

A) contains only one element

B) is a mixture of gases

C) can be separated by filtering

D) contains two elements chemically bonded

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Question 23

The number of neutrons in a carbon – 13 atom is ____

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Question 24

Going down a group, ionization energy generally

A) decreases

B) increases

C) stays the same

D) becomes zero

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Question 25

Using whole number atomic masses ($H = 1$, $S = 32$, $O = 16$), the molar mass of sulfuric acid, H_2SO_4, in grams per mole, is ____

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ANSWER KEY

1. A
2. B
3. 44
4. C
5. 18
6. D
7. A
8. 3
9. B
10. C
11. 58
12. D
13. A
14. 79
15. B
16. C
17. 8
18. A
19. C
20. 30
21. B
22. D
23. 7
24. A
25. 98

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