CHEMISTRY · NEW JERSEY

Chemistry

Practice Test

Unit 1: Matter and Atomic Structure

25 Questions

Original practice test based on the New Jersey 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 negative charge

A) Proton

B) Neutron

C) Electron

D) Nucleus

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Question 2

An atom has 11 protons and 12 neutrons. The element is

A) sodium

B) magnesium

C) neon

D) aluminum

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Question 3

Chlorine has atomic number 17 and mass number 37. 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) protons but different numbers of neutrons

C) electrons but different numbers of protons

D) protons and neutrons in every case

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Question 5

A neutral atom has 8 protons. The number of electrons it has is

A) 6 B) 8

C) 10 D) 16

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Question 6

Magnesium has atomic number 12. The number of electrons in Mg^{2+} is ____

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Question 7

The mass number of an atom is the sum of its

A) protons and electrons

B) neutrons only

C) protons and neutrons

D) electrons and neutrons

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Question 8

The element in group 2 and period 4 is

A) potassium

B) calcium

C) strontium

D) argon

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Question 9

Sulfur is in group 16. The number of valence electrons it has is ____

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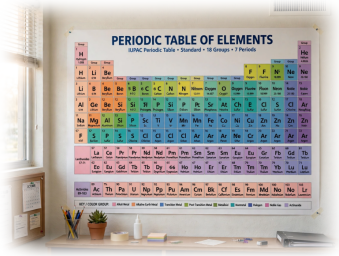

Question 10

Going down a group in the periodic table, atomic radius generally

A) decreases because nuclear charge increases

B) stays the same in every group

C) decreases because electrons are lost

D) increases because a new energy level is added

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Question 11

Going across a period from left to right, ionization energy generally

A) increases

B) decreases

C) stays the same

D) falls to zero

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Question 12

A cation forms when a neutral atom

A) loses electrons

B) gains electrons

C) gains protons

D) loses neutrons

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Question 13

An atom has 26 protons and 30 neutrons. Its mass number is ____

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Question 14

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 15

Which of these is an element

A) salt water

B) air

C) iron

D) brass

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Question 16

The number of protons in a carbon – 14 atom is ____

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Question 17

Which of these is a heterogeneous mixture

A) salt dissolved in water

B) sand and water

C) air

D) sugar dissolved in water

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Question 18

Which of these is a physical change

A) burning wood

B) rusting iron

C) melting ice

D) baking a cake

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Question 19

A sample has mass 50 g and volume 25 cm^3. Its density, in grams per cm^3, is ____

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Question 20

The electron arrangement of a sodium atom is

A) 2, 8, 2

B) 2, 8, 1

C) 2, 7, 2

D) 2, 8, 0

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Question 21

Going down a group, electronegativity generally

A) increases

B) stays the same

C) becomes zero

D) decreases

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Question 22

Using whole number atomic masses ($H = 1$, $O = 16$), the molar mass of water, in grams per mole, is

____

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Question 23

Carbon dioxide 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 24

Which particles are found in the nucleus of an atom

A) protons and neutrons

B) electrons and protons

C) electrons only

D) neutrons only

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Question 25

Using whole number atomic masses ($Ca = 40, C = 12, O = 16$), the molar mass of calcium carbonate, in grams per mole, is ____

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ANSWER KEY

1. C
2. A
3. 20
4. B
5. B
6. 10
7. C
8. B
9. 6
10. D
11. A
12. A
13. 56
14. B
15. C
16. 6
17. B
18. C
19. 2
20. B
21. D
22. 18
23. D
24. A
25. 100

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