VERMONT CHEMISTRY · UNIT 1

# Matter and Atomic Structure — Practice Test

**Vermont Chemistry • 25 questions**

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 particle has a negative charge**

A Proton

B Neutron

C Electron

D Nucleus

Understand It with Pulse | Flag a mistake

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

A sodium

B magnesium

C neon

D aluminum

Understand It with Pulse | Flag a mistake

3 **Chlorine has atomic number 17 and mass number 37. The number of neutrons in this atom is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

**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

Understand It with Pulse | Flag a mistake

**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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6 **Magnesium has atomic number 12. The number of electrons in $Mg^{2+}$ is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

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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8 **The element in group 2 and period 4 is**

A potassium

B calcium

C strontium

D argon

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

ANSWER _____

Understand It with Pulse | Flag a mistake

**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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**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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12 **A cation forms when a neutral atom**

A loses electrons

B gains electrons

C gains protons

D loses neutrons

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

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

Understand It with Pulse | Flag a mistake

15 **Which of these is an element**

A salt water

B air

C iron

D brass

Understand It with Pulse | Flag a mistake

16 **The number of protons in a carbon-14 atom is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **Which of these is a heterogeneous mixture**

A salt dissolved in water

B sand and water

C air

D sugar dissolved in water

Understand It with Pulse | Flag a mistake

18 **Which of these is a physical change**

A burning wood

B rusting iron

C melting ice

D baking a cake

Understand It with Pulse | Flag a mistake

19 **A sample has mass 50 g and volume 25 cm³. Its density, in grams per cm³, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

**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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**21** **Going down a group, electronegativity generally**

- A increases
- B stays the same
- C becomes zero
- D decreases

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

ANSWER _____

Understand It with Pulse | Flag a mistake

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

Understand It with Pulse | Flag a mistake

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

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

# ANSWER KEY

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

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