MASSACHUSETTS CHEMISTRY · UNIT 1 · 25 QUESTIONS

Matter and Atomic Structure — 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 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

Understand It with Pulse | Flag a mistake

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

Understand It with Pulse | Flag a mistake

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

A potassium

B calcium

C strontium

D argon

Understand It with Pulse | Flag a mistake

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

Understand It with Pulse | Flag a mistake

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

A increases

B decreases

C stays the same

D falls to zero

Understand It with Pulse | Flag a mistake

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

Understand It with Pulse | Flag a mistake

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

A increases

B stays the same

C becomes zero

D decreases

Understand It with Pulse | Flag a mistake

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
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

© 2026 Brett Robbins. All Rights Reserved.