CALIFORNIA CHEMISTRY · UNIT 1 · 25 QUESTIONS

Atomic Structure and Periodic Properties — 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 **The atomic number of an element is the number of**

- A Protons in the nucleus
- B Mass units
- C Electrons + neutrons
- D Neutrons in the nucleus

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2 **An atom of carbon has atomic number 6 and mass number 12 The number of neutrons is**

ANSWER _____

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3 **A neutral atom with 11 protons has how many electrons**

ANSWER _____

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4 **Isotopes of the same element have the same number of protons but different numbers of**

A Neutrons

B Energy levels

C Electrons

D Protons

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5 **An isotope with 6 protons and 8 neutrons has mass number**

ANSWER _____

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6 **The average atomic mass of an element is a weighted average based on the**

A Number of electrons

B Relative abundance of its isotopes

C Number of bonds

D Atomic number only

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7 **Chlorine has isotopes of mass 35 (75 percent) and mass 37 (25 percent) The average atomic mass is about**

A 37.0

B 36.0

C 35.0

D 35.5

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8

The nucleus of an atom contains

A Protons and neutrons

B Electrons only

C Protons and electrons

D Neutrons and electrons

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9

Electrons occupy regions around the nucleus called

A Nuclei

B Protons

C Energy levels or orbitals

D Ions

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10 **The electron configuration of sodium, atomic number 11, is**

- **A** 2, 8, 1
- **B** 2, 8, 2
- **C** 2, 8, 8
- **D** 2, 7, 2

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11 **A valence electron is an electron in the**

- **A** Innermost shell
- **B** Nucleus
- **C** Outermost shell
- **D** Neutron

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12 **Elements in the same group of the periodic table have similar**

A Atomic masses

B Numbers of neutrons

C Numbers of valence electrons

D Densities only

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13 **Across a period from left to right, atomic radius generally**

A Decreases

B Doubles

C Stays the same

D Increases

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14 **Down a group, atomic radius generally increases because each step adds a new**

- A Valence electron only
- B Proton only
- C Neutron only
- D Electron shell

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15 **Ionization energy is the energy needed to**

- A Form a bond
- B Remove an electron from an atom
- C Add an electron
- D Split a nucleus

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16 **Across a period, ionization energy generally**

A Decreases

B Increases

C Stays the same

D Becomes zero

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17 **Electronegativity is a measure of how strongly an atom**

A Emits light

B Loses protons

C Attracts shared electrons in a bond

D Gains neutrons

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18 **The most electronegative element is**

A Oxygen

B Nitrogen

C Chlorine

D Fluorine

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19 **A metal is best described as an element that is generally**

A A gas at room temperature

B A good conductor of heat and electricity and malleable

C Unable to lose electrons

D Brittle and dull

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20 **A nonmetal on the right side of the periodic table tends to**

A Be a good conductor

B Have no electrons

C Gain electrons in reactions

D Lose electrons easily

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21 **A metalloid has properties**

A Of noble gases only

B Of metals only

C Intermediate between metals and nonmetals

D Of nonmetals only

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22 **A noble gas is generally unreactive because it has a**

A Full outer electron shell

B Empty outer shell

C Large atomic radius only

D Single valence electron

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23 **When sodium loses one electron it forms an ion with charge**

A 1+

B 2+

C 1-

D 0

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24 When chlorine gains one electron it forms an ion with charge

- A 1-
- B 0
- C 1+
- D 2-

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25 An atom has 17 protons, 18 neutrons, and 17 electrons Its mass number is

ANSWER _____

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ANSWER KEY

1. A
2. 6
3. 11
4. A
5. 14
6. B
7. D
8. A
9. C
10. A
11. C
12. C
13. A
14. D
15. B
16. B
17. C
18. D
19. B
20. C
21. C
22. A
23. A
24. A
25. 35

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