

Do Not Write on Test - Please!

**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

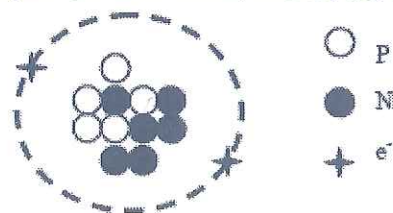
- D 1. Particles of matter that make up protons and neutrons are \_\_\_\_.
- a. electrons      b. isotopes      c. atoms      d. quarks
- D 2. The number of protons in a neutral atom is equal to the number of \_\_\_\_.
- a. neutrons      b. isotopes      c. ions      d. electrons
- D 3. Elements that are gases, are brittle, and are poor conductors at room temperature are \_\_\_\_.
- a. metalloids      b. metals      c. isotopes      d. nonmetals
- B 4. Hydrogen is grouped with the alkali metals because it \_\_\_\_.
- a. does not readily form compounds  
b. has one electron in its outer energy level  
c. is a metal  
d. is a gas
- C 5. Horizontal rows of the periodic table are called \_\_\_\_.
- a. groups      b. clusters      c. periods      d. families
- C 6. Each inner energy level of an atom has a maximum number of \_\_\_\_ it can hold.
- a. protons      b. neutrons      c. electrons      d. quarks

Identify the following elements using your periodic table.

- A 7. I am an isotope of Carbon and I have 8 neutrons. What is my mass number?
- a. 14      b. 8      c. 6      d. 12
- C 8. I am in Group 14 and in Period 3. What type of element am I?
- a. Non-metal      b. Metal      c. Metalloid
- A 9. I am in the Halogen family and I am in Period 3.
- a. Cl      b. Br      c. Al      d. Sc
- C 10. I have an atomic number of 20.
- a. Co      b. Ne      c. Ca      d. F
- C 11. I have 4 energy levels and I have 2 electron in my outer energy level.
- a. C      b. K      c. Ca      d. Be

- D 12. Atoms of Elements X and Z each have 5 electrons in their outer shells. What else must these two elements have in common?
- They must be in the same **period**.
  - They must have the same total number of electron shells.
  - They must have the same atomic mass.
  - They must be found in the same **group** in the periodic table.
- C 13. Metals can be used as wire because they are \_\_\_\_.
- alloys
  - metallic
  - ductile
  - shiny
- A 14. Atoms of the same element with different numbers of neutrons are called \_\_\_\_.
- isotopes
  - metalloids
  - metals
  - radioactive elements
- D 15. I have 9 protons and I have gained 1 electron. How would you write my symbol?
- $\text{Be}^{1+}$
  - $\text{Be}^{1-}$
  - $\text{H}^{1-}$
  - $\text{F}^{1-}$
  - $\text{F}^{1+}$

Using this picture and your periodic table, answer the following 3 questions.



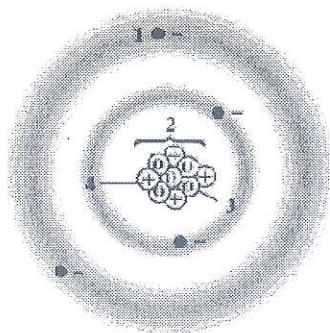
- D 16. What is the mass number?
- 5
  - 6
  - 2
  - 11
- A 17. What is the atomic number?
- 5
  - 6
  - 2
  - 11
- C 18. Is this an
- isotope
  - atom
  - ion
  - both ion and isotope
- B 19. Why do noble gases almost never form chemical bonds?
- They have very small atomic radii.
  - They have filled outer valence shells.
  - It is difficult for gases to form bonds.
  - They are very rare.
- C 20. Substances that conduct an electric current only under certain conditions are most likely to be \_\_\_\_.
- nonmetals
  - noble gases
  - metalloids
  - metals

- A 21. Ions of an element have
- the same number of protons and neutrons, but a different number of electrons.
  - the same number of neutrons but a different number of protons.
  - the same number of protons but a different number of neutrons.
  - a different number of protons and neutrons.

- A 22. The noble gases are in \_\_\_\_.
- Group 18
  - Group 13
  - Group 1
  - Group 2

- D 23. At room temperature, most metals are \_\_\_\_.
- liquids
  - radioactive
  - gases
  - solids

Beryllium



- A 24. The following diagram shows a model of a beryllium atom. Which of the marked particles represents a proton?
- 4
  - 3
  - 1
  - 2
- A 25. The magnesium ion,  $Mg^{2+}$ , has how many electrons?
- 10
  - 2
  - 14
  - 8
- D 26. A single proton surrounded by an electron is best described as
- a compound
  - a nucleus
  - a neutron
  - an atom
- B 27. Which two particles in an atom have opposite charges?
- neutron and electron
  - electron and proton
  - proton and nucleus
  - neutron and proton
- A 28. Which of the following pairs are isotopes of the same element?
- atom *J* (27 protons, 32 neutrons) and atom *L* (27 protons, 33 neutrons)
  - atom *V* (8 protons, 8 neutrons) and atom *W* (7 protons, 8 neutrons)
  - atom *S* (17 protons, 18 neutrons) and atom *R* (57 protons, 81 neutrons)
  - atom *Q* (56 protons, 81 neutrons) and atom *T* (18 protons, 17 neutrons)

Name: \_\_\_\_\_

ID: A

- A 29. A chemical symbol represents the \_\_\_\_ of an element.  
a. name                      b. reaction                      c. group                      d. structure
- D 30. Which of the following gives an atom's mass number?  
a. number of protons + number of neutrons + number of electrons  
b. number of protons + number of electrons  
c. number of neutrons  
d. number of neutrons + number of protons
- A 31. Which pair of elements has the most similar properties?  
a. Ne and Ar                      c. Li and He  
b. Na and Cl                      d. Ca and F
- C 32. A particle that moves around the nucleus is a(n) \_\_\_\_.  
a. proton                      b. quark                      c. electron                      d. neutron
- A 33. The appearance of solid metals can be described as \_\_\_\_.  
a. shiny                      b. powdery                      c. glassy                      d. dull
- A 34. The elements in Groups 3 through 12 of the periodic table are the \_\_\_\_.  
a. transition elements                      b. alkaline earth metals                      c. halogens                      d. actinides
- D 35. Isotopes of an element have  
a. a different number of protons and neutrons.  
b. the same number of neutrons but a different number of protons.  
c. the same number of protons and neutrons, but a different number of electrons.  
d. the same number of protons but a different number of neutrons.
- A 36. I have 9 protons and I have gained 1 electron. How would you describe me?  
a. Ion                      b. Atom                      c. Isotope
- B 37. When an atom loses an electron, it becomes a  
a. neuion                      b. cation                      c. dogion                      d. anion
- B 38. The valence shell of a neutral atom gains two electrons. Which of the following ions might result?  
a.  $\text{Be}^+$                       b.  $\text{O}^{2-}$                       c.  $\text{N}^{3-}$                       d.  $\text{Mg}^{2+}$
- A 39. A certain atom has 26 protons, 26 electrons, and 30 neutrons. Its mass number is \_\_\_\_.  
a. 56                      b. 52                      c. 26                      d. 30
- A 40. When an atom gains an electron, it becomes a  
a. anion                      b. cation                      c. neuion                      d. dogion