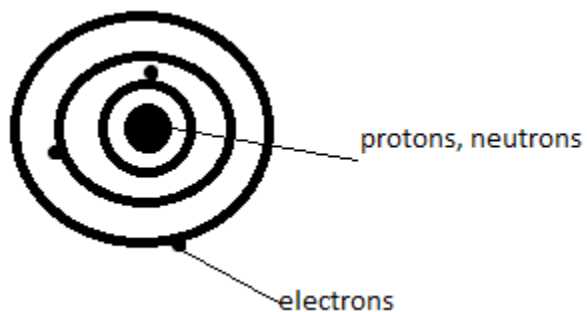


Answer key atomic structure and the periodic table interactive study

Part I

1. Greek- Democritus
2.
 - a. Atoms are invisible
 - b. Same element (atoms) have same property
 - c. Different elements have different properties
 - d. Compounds are ratios of elements
3.
 - a. Negative
 - b. Electrons
 - c. Cathode ray tube
4.
 - a. Nucleus deflects alpha particles
 - b.
 - i. Most of an atom is empty space
 - ii. Nucleus has a positive charge
 - iii. Nucleus is dense



- 5.
6. DM
7. DM
8. T
9. R
10. DL
11. DL
12. B
13. R
14. B

PART II

1. Increasing atomic mass
2. Mendeleev, scandium, gallium, germanium
3. Moseley, atomic number

4. Periods- across
Groups- up and down, also called "family", similar chemical properties
Representative elements (main group) 1,2, 13-18
Transition elements -3-12

PART III

1. Capital letter for 1 letter. Capital letter and lower case letter for two letters
2.
 - a. Calcium, Ca
 - b. Sulfur, S
 - c. Iron, Fe
3.
 - a. Nitrogen, N
 - b. Phosphorus, P
 - c. Silver, Ag
4. Similar chemical properties used to predict chemical reactions
5. 1, 2, 7, 8
6. Alkali metals
7. Halogens
8. Noble gases
9.
 - a. Br
 - b. Magnesium
10.
 - a. Br
 - b. Magnesium
 - c. Ge, Sn, Pb
 - d. N, P, As
11. METALS are good conductors, ductile, malleable, luster, lose electrons to form positive ions
NON METALS are poor conductors, not lustrous, brittle, gain electrons to form negative ions
12. Metalloids are along the diagonal line between the transition metals and the nonmetals. They have the properties of both metals and nonmetals
13. S
 - a. Nonmetals
 - b. Nonmetals
 - c. Metals
 - d. Metals
 - e. Nonmetals
 - f. Metals
- 14.

- a. Ge, Sn, Pb
- b. N, P, As

PART IV

1. Similar chemical properties
2. Group 1
3. Group 2
4. Group 7
5. Group 8
6. Halogens
7. Alkaline metals
8. Noble gases

PART V

1. ELECTRON e, -, 0
PROTON p, +, 1
NEUTRON n, 0, 1
2. Protons + neutrons in nucleus, electrons orbit outside nucleus
3. Positive
4. # of protons
5.
 - a. 7 protons
 - b. 16 protons
 - c. 56 protons
6. No charge
7. Atomic # = # protons + # neutrons
8. Protons + neutrons
9. Mass # = # protons + # neutrons
10. Atomic # , 11 protons , sodium
11. Atoms with the same number of protons but different number of neutrons
12. # neutrons
13. # electrons and # protons
14. Carbon – 14
15.
 - a. 6,6,6
 - b. 6,7,6
 - c. 6,8,6
16.
 - a. 30
 - b. 35
 - c. 67

17.

- a. Oxygen- 16
- b. Chlorine – 37
- c. Silver – 107

18.

- a. 14
- b. 34
- c. Si
- d. Element X (14)-36

19. Carbon – 12

20. Average of all isotopes for an element

21. All the isotopes and their abundance %

22.

- a. 40.1 amu
- b. 27.0 amu
- c. 207.2 amu
- d. 137.3 amu
- e. 5.8 amu

23. $\text{Mass isotope}_1 (\%) / 100 + \text{Mass isotope}_2 (\%) / 100 + \dots$

24. No

25. $69 \text{ amu} \times 62.2/100 = 41.5 \text{ amu}$

$71 \text{ amu} \times 39.8 /100 = 28.3 \text{ amu}$

Sum = 69.8 amu for Ga