

NAME _____

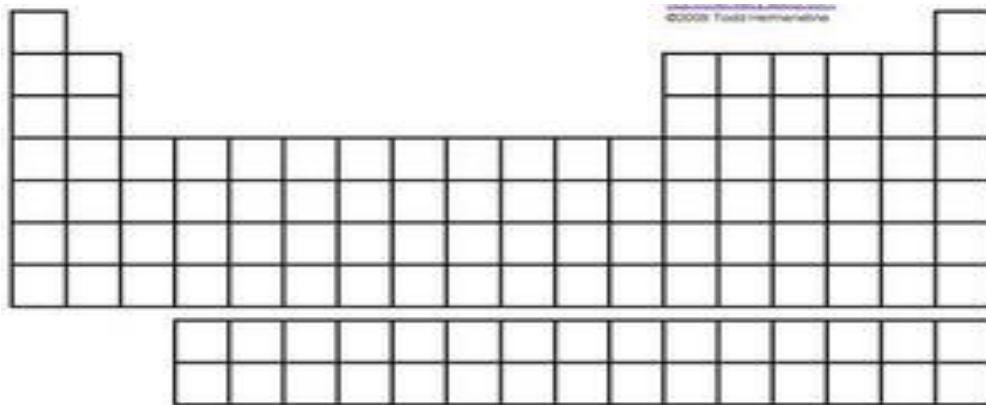
CHEM1301/Exam 2/Dooley
Sept 30, 2013

- _____1. Which statement below accurately describes the contributions of Mendeleev?
- A) ancient Greek philosopher who proposed that matter was continuous
 - B) created the modern periodic table
 - C) proposed the modern Atomic Theory
 - D) discovered the existence of electrons
 - E) none of the above
- _____2. Which of the following statements about the nature of electrical charge is FALSE?
- A) Electrical charge is a fundamental property of protons and electrons.
 - B) Positive and negative electrical charges attract each other.
 - C) Positive-positive or negative-negative charges repel each other.
 - D) Positive and negative charges cancel each other so that a proton and electron, when paired, are charge neutral.
 - E) All of the above statements are true.
- _____3. Nonmetals are located where on the periodic table?
- A) left side
 - B) right side
 - C) middle
 - D) zig-zag diagonal line
 - E) none of the above
- _____4. Transition metals are located where on the periodic table?
- A) left side
 - B) right side
 - C) middle
 - D) zig-zag diagonal line
 - E) none of the above
- _____5. Kr is a member of which family?
- A) noble gases
 - B) halogens
 - C) alkaline earth metals
 - D) alkali metals
 - E) none of the above

- _____6. All of the following statements about different elements are true EXCEPT:
- A) Barium is an alkaline earth metal.
 - B) Manganese is a transition metal.
 - C) Germanium is considered a metalloid.
 - D) Potassium is one of the noble gases.
 - E) Iodine is a halogen.
- _____7. Isotopes are:
- A) atoms of the same element that have different number of neutrons.
 - B) atoms of the same element that have different number of protons.
 - C) atoms of the same element that have different number of electrons.
 - D) atoms of the same element that have the same number of neutrons.
 - E) none of the above
- _____8. A specific isotope of an element is known to have 15 protons and 16 neutrons. Which symbol would properly represent this isotope?
- A) $^{15}_{31}\text{Ga}$
 - B) $^{31}_{15}\text{P}$
 - C) $^{16}_{15}\text{X}$
 - D) $^{31}_{16}\text{S}$
 - E) none of the above
- _____9. How many oxygen atoms are in the formula $\text{Al}_2(\text{CO}_3)_3$?
- A) 3
 - B) 9
 - C) 1
 - D) 6
 - E) none of the above
- _____10. Which metal atom below would NOT be involved in formation of a Type II ionic compound?
- A) Na
 - B) Mn
 - C) Fe
 - D) Cr
 - E) none of the above

Atomic Mass Calculation (10 Points). No credit for answers with work I can't follow. Calculate the atomic mass of Lithium if 7.42% exists as Li-6 with a mass of 6.015 amu and 92.58% exists as Li-7 with a mass of 7.016 amu?

Referring to the blank periodic table below, provide the names (2 Points) and the common charges (2 Points) for each of the families marked:



| Column | Family Name | Common Charge |
|--------|-------------|---------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |

Fill in the table below (15 Points):

| Symbol (with charge) | Number of Protons | Number of neutrons | Number of electrons | Atomic Number (Z) | Mass Number (A) | Atomic Mass (amu) | Charge |
|------------------------|-------------------|--------------------|---------------------|-------------------|-----------------|-------------------|-----------|
| F⁻ | | | | | 18 | | -1 |
| | | | 73 | 78 | | 195.08 | |
| Ca²⁺ | 20 | | | | 43 | | |

Naming Compounds and Molecules (30 Pts Total)

11-20 Identify the compound as either Molecular, Ionic Type 1, or Ionic Type 2. (1 Pt)

21-30 Write the name/formula for the listed compounds. (2 Pts)

| | 11-20: Identify Type | 21-30: Name/Formula |
|----------------------------|----------------------|---------------------|
| Potassium acetate | | |
| phosphorous pentachloride | | |
| manganese (II) phosphate | | |
| Fe_2O_5 | | |
| diphosphorus pentoxide | | |
| SiCl_4 | | |
| $\text{Mg}(\text{NO}_2)_2$ | | |
| Lead (IV) iodide | | |
| TiO_2 | | |
| RbOH | | |

