**Name: Period: Seat#:**

**Worksheet #2**

**Use each of the terms below just once to complete the passage. Some may not be used.**

Atomic mass atomic number elements accepted Dmitri Mendeleev

Properties Henry Moseley eight protons periodic law

The first periodic table is mostly credited to **(1)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. In his table, the elements were arranged according to increasing **(2)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. One important result of this table was that the existence and properties of undiscovered **(3)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ could be predicted. The elements in the modern periodic table are arranged according to increasing **(4)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, as a result of the work of **(5)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This arrangement is based on number of **(6)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the nucleus of an atom of the element. The modern form of the periodic table results in the   
**(7)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which states that when elements are arranged according to increasing atomic number, there is a periodic repetition of their chemical and physical **(8)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Use the information on the left taken from the periodic table to complete the table on the right.**

|  |
| --- |
| 7 |
| N |
| Nitrogen |
| 14.007 |
| 1s22s22p3 |

|  |  |
| --- | --- |
| **Atomic mass** | **9.** |
| **Atomic Number** | **10.** |
| **Electron Configuration** | **11.** |
| **Chemical Name** | **12.** |
| **Chemical Symbol** | **13.** |

**For each item in Column A, write the letter of the matching item in Column B:**

\_\_\_\_\_\_\_ **14)** A column on the periodic table **a**. metals

\_\_\_\_\_\_\_ **15)** A row on the periodic table **b**. group

\_\_\_\_\_\_\_ **16)** Group B elements **c.** period

\_\_\_\_\_\_\_ **17)** Elements that are shiny and conduct electricity **d**. Transition elements

\_\_\_\_\_\_\_ **18)** Group A elements **e.** Representative elements

**Write *true* if the statement is true; if the statement is false, change the italicized word or phrase to make it true.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **19)** There are *two* main classifications of elements.

­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **20)** More than three-fourths of the elements in the periodic table are *nonmetals.*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **21)** Group 1A elements (except for hydrogen) are known as the *alkali metals.*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **22)** *Group 3A* elements are the alkaline earth metals.   
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **23)** Group 7A elements are highly reactive nonmetals knows *halogens.*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **24)** Group 8A elements are very unreactive elements known as *transition elements.*

­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **25)** Metalloids have properties of both metals and *transition metals*

**Match each element in Column A with the element in Column B that has the most similar properties.**

\_\_\_\_\_ **26)** Arsenic (As) **a**. Boron (B)

\_\_\_\_\_ **27)** Bromine (Br) **b**. Cesium (Cs)

\_\_\_\_\_ **28)** Cadmium (Cd) **c**. Chromium (Cr)

\_\_\_\_\_ **29)** Gallium (Ga) **d**. Cobalt (Co)

\_\_\_\_\_ **30)** Germanium (Ge) **e**. Hafnium (Hf)

\_\_\_\_\_ **31)** Iridium (Ir) **f**. Iodine (I)

\_\_\_\_\_ **32)** Magnesium (Mg) **g**. Iron (Fe)

\_\_\_\_\_ **33)** Neon (Ne) **h**. Nitrogen (N)

\_\_\_\_\_ **34)** Nickel (Ni) **i**. Platinum (Pt)

\_\_\_\_\_ **35)** Osmium (Os) **j**. Scandium (Sc)

\_\_\_\_\_ **36)** Sodium (Na) **k**. Silicon (Si)

\_\_\_\_\_ **37)** Tellurium (Te) **l**. Strontium (Sr)

\_\_\_\_\_ **38)** Tungsten (W) **m**. Sulfur (S)

\_\_\_\_\_ **39)** Yttrium (Y) **n**. Zinc (Zn)

\_\_\_\_\_ **40)** Zirconium (Zr) **o**. Xenon (Xe)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **41)** Why do sodium and   potassium have similar   chemical properties? | | **42)** How is the energy level of an element’s valence   electrons related to its period on the periodic   table? Give an example. | | | | **43)** Into how many blocks is   the periodic table   divided? |
| 1. What groups of elements does the s-block contain? | | 1. Why does the s-block portion of the periodic table span two groups? | | 1. What groups of elements does the p-block contain? | | 1. Why are members of group 8A virtually unreactive? |
| 1. How many d-block elements are there? | 1. What groups of elements does the d-block contain? | | 1. Why does the f-block portion of the periodic table span 14 groups? | | 1. What is the electron configuration of the element in period 3, group 6A? | |
| 1. Write the electron configurations for the elements in periods 2-4 of group 2A   *Period 2, Group 2A:*  *Period 3, Group 2A:*  *Period 4, Group 2A:* | | | **53)** Determine the group, period, valence electrons and group name of the elements below:  **a.** 1s22s22p4   *Group #: Period #: # Valence e-: Group Name:*  **b.** 1s22s22p63s23p64s23d104p65s24d105p66s1  *Group #: Period #: # Valence e-: Group Name::*    **c.** 1s22s22p63s23p64s23d104p2  *Group #: Period #: # Valence e-: Group Name:* | | | |
| **54)** Write the electron configuration of the element fitting each of   the following descriptions.  **a.** Group 8A element in the third period.  **b.**  Halogen in the second period.  **c.** Group 4A element in the fourth period.  **d.** Group 1A element in the fourth period | | | | **55)** What are the noble-gas configurations of all the elements   with the following valence electron configurations  **a.** s2  **b.** s2p1 | | |