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

|  |  |  |
| --- | --- | --- |
| **WORTH: 5% of final grade:** |  | **/118** |
| On your periodic table of elements, label the following for 1 mark each:  8 family names in different colours |  | 8 marks |
| Metals in tones of blue |  | 1 mark |
| Metalloids in tones of red |  | 1 mark |
| Non-metals in tones of green/yellow |  | 1 mark |
| Draw the staircase that separates the metals from the non-metals |  | 1 mark |
| Write the symbol, atomic number and charge for elements #1-56 & 72-88: |  | 73 marks |
| Outline the boxes for the transition metals # 22-29; 41, 44, 46, 78-84 |  | 18 marks |
| 7 periods (#1-7) on the cation side |  | 1 mark |
| Draw an arrow up/down and right/left to show increasing:  # Electron shells |  | 2 marks |
| Atomic mass |  | 2 marks |
| Atomic radius |  | 2 marks |
| Reactivity |  | 2 marks |
| Conductivity |  | 2 marks |
| Electronegativity |  | 2 marks |
| Melting Temperature |  | 2 marks |

# **WORTH: 5% of final grade:** Chemistry 11 - Unit 8

1. Fill in the following table.

**Symbol Mass # Atomic # Protons Neutrons Electrons**\_\_\_\_\_\_\_\_

66 30 30\_\_\_\_\_\_\_\_\_\_\_\_\_\_

46 60 46\_\_\_\_\_\_\_\_\_\_\_\_\_\_

88 38 36\_\_\_\_\_\_\_\_\_\_\_\_\_\_

41 52 41\_\_\_\_\_\_\_\_\_\_\_\_\_\_

56Mn25\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. a. What are **valence electrons**?

* 1. How many valence electrons do the following have?

(1) Ca \_\_\_\_\_ (2) Se \_\_\_\_\_ (3) O2- \_\_\_\_\_

1. What is the **ionization energy** of a substance?
2. Why does ionization energy change as you move down/ across a vertical column/ row?
3. What is the **atomic radius** of a substance?
4. Why does atomic radius change as you move down/ across a column/ row?
5. What is the **electronegativity** of a substance?
6. Why does electronegativity change as you move down/ across a vertical column/ row?
7. Consider two atoms: Mg and Cl
   1. Which has the larger atomic radius? \_\_\_\_\_
   2. Which has the larger ionization energy? \_\_\_\_\_
   3. Which has the larger electronegativity \_\_\_\_\_
   4. How many valence electrons does Cl have? \_\_\_\_\_
8. Circle the member of each of the following pairs you expect to have the higher **melting point.** Explain why for each pair.
   1. NaCl or KBr \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. BeO or LiF \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. KF or CsI \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. CaS or KCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. What kinds of atoms are involved in **ionic bonding**? What holds ions together in the **ionic bond**?
10. What kinds of ions are involved in **covalent bonds**? What holds ions together in the **covalent bond**?
11. What is a **dipole**?
12. What are **London forces**? How strong are they? When are they important?
13. What is meant by a **polar covalent** bond?
14. Draw Lewis Structures (Electron-dot diagrams) for the following **ionic** compounds:

CaF2 AlF3 H2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. Draw Lewis Structures (Electron-dot diagrams) for the following **covalent** compounds:

CCl4 CH4 N2Br4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemistry 11 Unit 8 Atoms and Periodic Table Take-Home Test and Assignment

