



Name:.....

Grade 10 (      )

**Revision sheet for Grade (10) Chemistry**

**FINAL EXAM - Term2,**

**2018/ 2019**

❖ *Materials for the Exam, you should Study from:*

**Chapter (6)**

**1- Lesson(3) Ionic Bonding & Ionic compound**

**2- Lesson(4) Metallic Bonding**

**Interactive Book: Pages. (188 - 196)**

**Chapter (7)**

**3- Lesson (1) Chemical formula & Chemical compounds**

**4- Lesson (2) Oxidation Numbers**

**Interactive Book: Pages (213 - 229)**

**5- Revision sheet.**

**6- Given worksheets**

**PART A : Ionic bonding and Ionic compounds:**

**A) Choose the right answer:**

\_\_\_ 1. An ionic bond results from electrical attraction between

- a. cations and anions.
- b. atoms.
- c. dipoles.
- d. orbital.

\_\_\_ 2. A nonpolar covalent bond is unlikely when two atoms of different elements join because the atoms are likely to differ in

- a. density.
- b. state of matter.
- c. electronegativity.
- d. polarity.



\_\_\_ **3. To draw a Lewis structure, it is *not* necessary to know**

- a. which atoms are in the molecule.
- b. bond energies.
- c. the number of valence electrons for each atom.
- d. the number of atoms in the molecule.

\_\_\_ **4. For multiple covalent bonds to form in molecules, the molecules must contain carbon, nitrogen, or**

- a. chlorine.
- b. hydrogen.
- c. oxygen.
- d. helium.

\_\_\_ **5. Lattice energy is an indication of the**

- a. strength of an ionic bond.
- b. number of ions in a crystal.
- c. strength of a metallic bond.
- d. strength of a covalent bond.

\_\_\_ **6. The charge on an ion is**

- a. always positive.
- b. always negative.
- c. either positive or negative.
- d. zero.

\_\_\_ **7. According to the octet rule, a calcium atom has a tendency to**

- a. lose one electron.
- b. lose two electrons.
- c. gain one electron.
- d. gain two electrons.

\_\_\_ **8. If a compound forms by ionic bonding, which is *not* true?**

- a. A positively charged atom or group of atoms attracts a negatively charged atom or group of atoms.
- b. The net charge of the compound is zero.
- c. The compound contains just two atoms, each of opposite charge.
- d. Several ions group together in a tightly packed structure.



\_\_ 9. The only property listed that is *not* characteristic of ionic compounds is .....

- a. high melting point.
- b. hardness.
- c. lack of crystal structure.
- d. brittleness.

\_\_ 10. As the electronegativity difference between bonded atoms decreases, the bond becomes more

- a. covalent.
- b. ionic.
- c. metallic.
- d. Both (b) and (c)

**B) Answer these questions:**

1. Explain what is the **Ionic compound**? P. 188-190

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2. Define the **Formula unit**.

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3. Write the definition of **Lattice energy**.

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4. What is the **polyatomic ion**? P.192

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5. What is the LEWIS STRUCTURE of polyatomic ions:





**PART B: CHEMICAL FORMULAS AND NAMES:**

**6. Write formulas for the binary ionic & Polyatomic compounds formed**

**between the following elements:** p. 213-217

- a) Potassium and iodine .....
- b) Aluminum and sulfate .....
- c) Magnesium and chlorine .....
- d) Aluminum and nitrogen .....
- e) Sodium and sulfur .....

**7. Name the binary ionic compounds indicated by the following formulas:**

- a)  $Al_2O_3$  .....
- b)  $MgBr_2$  .....
- c)  $Ag Cl$  .....
- d)  $Na Cl$  .....
- e)  $Zn O$  .....
- f)  $Ba O$  .....
- g)  $Ca Br_2$  .....

**8. How many ATOMS are present in each of these formula units?**

- \_\_\_\_\_ a.  $Mg (HCO_3)_2$
- \_\_\_\_\_ b.  $H_3SO_4$
- \_\_\_\_\_ c.  $Fe (ClO_2)_3$
- \_\_\_\_\_ d.  $Fe (ClO_3)_2$

**9. Define the Oxyanions?** P.219

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**10. Write the meaning of ACID and SALT ?** P.222-223

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11. The explosive TNT has the molecular formula  $C_7H_5(NO_2)_3$ .

- \_\_\_\_\_ a. How many elements make up this compound?
- \_\_\_\_\_ b. How many oxygen atoms are present in one molecule of  $C_7H_5(NO_2)_3$ ?
- \_\_\_\_\_ c. How many atoms in total are present in one molecule of  $C_7H_5(NO_2)_3$ ?
- \_\_\_\_\_ d. How many atoms are present in a sample of  $2.0 \times 10^{23}$  molecules of  $C_7H_5(NO_2)_3$ ?

12. \_\_\_\_\_ a. What is the formula for the compound dinitrogen pentoxide?
- \_\_\_\_\_ b. What is the Stock system name for the compound FeO?
- \_\_\_\_\_ c. What is the formula for sulfurous acid?
- \_\_\_\_\_ d. What is the name for the acid  $H_3PO_4$ ?

### **PART C: OXIDATION NUMBERS:**

13. Assign the OXIDATION NUMBER to the specified element in each of the following examples:

- \_\_\_\_\_ a. S in  $H_2SO_3$
- \_\_\_\_\_ b. S in  $MgSO_4$
- \_\_\_\_\_ c. S in  $K_2S$
- \_\_\_\_\_ d. Cu in  $Cu_2S$
- \_\_\_\_\_ e. Cr in  $Na_2CrO_4$
- \_\_\_\_\_ f. N in  $HNO_3$
- \_\_\_\_\_ g. C in  $(HCO_3)^-$
- \_\_\_\_\_ h. N in  $(NH_4)^+$

**GOOD LUCK!**