

**Ionic Compounds Practice Test****Part I – Multiple Choice – Choose the best answer for each of the following. (2 points each)**

1. \_\_\_\_\_ The melting point of MgO is higher than that of NaF. Explanations for this observation include which of the following?  
I.  $\text{Mg}^{2+}$  is more positively charged than  $\text{Na}^+$   
II.  $\text{O}^{2-}$  is more negatively charged than  $\text{F}^-$   
III. The  $\text{O}^{2-}$  ion is smaller than the  $\text{F}^-$  ion
- (A) II only      (B) I and II only      (C) I and III only      (D) II and III only      (E) I, II, and III
2. \_\_\_\_\_ Which ionic compound has the highest melting point?  
(A) KCl      (B)  $\text{K}_2\text{O}$       (C)  $\text{CaCl}_2$       (D) CaO      (E)  $\text{CaBr}_2$
3. \_\_\_\_\_ Which of the following substances can conduct electricity at room temperature?  
I. Mg      II.  $\text{CuCl}_2$       III. Cu
- (A) II only      (B) I and II only      (C) I and III only      (D) II and III only      (E) I, II, and III
4. \_\_\_\_\_ What is the oxidation number of phosphorus in copper(II) phosphite?  
(A) +2      (B) +3      (C) -3      (D) +4      (E) +5
5. \_\_\_\_\_ Which of the following is true about ionic compounds?  
I. They are most crystalline solids at room temperature.  
II. They only conduct electricity when dissolved in water.  
III. They have free moving electrons.
- (A) I only      (B) I and II only      (C) I and III only      (D) II and III only      (E) I, II, and III
6. \_\_\_\_\_ When LiF is formed from its elements there are five steps. Which of the following steps is NOT endothermic?  
I. Step 1: Sublimation of solid lithium.  $\text{Li}(s) \rightarrow \text{Li}(g)$   
II. Step 2: Ionization of lithium atom.  $\text{Li}(g) \rightarrow \text{Li}^+(g) + e^-$   
III. Step 4: Formation of fluoride ions.  $\text{F}(g) + e^- \rightarrow \text{F}^-(g)$
- (A) II only      (B) II only      (C) I and II only      (D) II and III only      (E) III only
7. \_\_\_\_\_ Which of the following would likely have the highest melting point?  
(A) LiCl      (B) LiF      (C) NaCl      (D) NaF      (E) KF
8. \_\_\_\_\_ What is the oxidation number of sulfur in aluminum sulfate?  
(A) +3      (B) -2      (C) +2      (D) +4      (E) +6
9. \_\_\_\_\_ What is the oxidation number of manganese in  $\text{MnO}_2$ ?  
(A) +2      (B) +3      (C) +4      (D) +6      (E) +7
10. \_\_\_\_\_ What is the oxidation number of ruthenium in  $\text{RuO}_3$ ?  
(A) +3      (B) +2      (C) +6      (D) +4      (E) +8

**Part II: Name each of the following. (2 points each)**

1. \_\_\_\_\_  $(\text{NH}_4)_2\text{CO}_3$       2. \_\_\_\_\_  $\text{Tl}_2\text{S}_3$   
3. \_\_\_\_\_  $\text{Mn}(\text{SO}_3)_3$       4. \_\_\_\_\_  $\text{CaI}_2$   
5. \_\_\_\_\_  $\text{Mg}(\text{NO}_2)_2$       6. \_\_\_\_\_  $\text{In}_2\text{Se}_3$   
7. \_\_\_\_\_  $\text{Hg}_2(\text{MnO}_4)_2$       8. \_\_\_\_\_  $\text{KClO}_2$   
9. \_\_\_\_\_  $\text{SrF}_2$       10. \_\_\_\_\_  $\text{WSiO}_3$   
11. \_\_\_\_\_  $\text{IrCrO}_4$       12. \_\_\_\_\_  $\text{La}(\text{C}_2\text{H}_3\text{O}_2)_3$   
13. \_\_\_\_\_  $\text{FeN}$       14. \_\_\_\_\_  $\text{GaP}$   
15. \_\_\_\_\_  $\text{Ru}(\text{ClO}_4)_4$       16. \_\_\_\_\_  $\text{VO}_2$   
17. \_\_\_\_\_  $\text{Sn}_3(\text{PO}_3)_2$       18. \_\_\_\_\_  $\text{PbCl}_2$   
19. \_\_\_\_\_  $\text{Cd}(\text{ClO}_3)_2$       20. \_\_\_\_\_  $\text{RhSO}_4$

**Part III: Write the formulas for each of the following. (2 points each). Please put a box around your answer.**

1. radium dichromate      2. francium iodide      3. barium oxide  
4. calcium perchlorate      5. rubidium sulfite      6. ammonium hydroxide  
7. iron(III) nitride      8. platinum(IV) nitrite      9. nickel(II) chloride  
10. plumbous bromide      11. nickelous permanganate      12. strontium chlorite  
13. niobium(III) sulfate      14. auric chlorate      15. potassium nitrite  
16. aluminum acetate      17. cobalt(II) nitrate      18. ruthenium(VI) silicate  
19. mercurous phosphate      20. stannic hypochlorite