Multiple Choice: 1 pt x 10 = 10 pts total

1. The correct formula for sodium oxide is
   - A. SO₂
   - B. S₂O
   - C. NaO₂
   - D. Na₂O
   
   D
   
   Na⁺ (aq) + O₂⁻ (aq) → Na₂O₁ → Na₂O

2. Which formula correctly represents iron (III) oxide?
   - A. Fe₂O₃
   - B. Fe₃O₂
   - C. FeO₃
   - D. Fe₃O
   
   A
   
   Fe³⁺ (aq) + O₂⁻ (aq) → Fe₂O₃

3. What is the correct name for the compound with the formula Cr₃P₄O₉?
   - A. chromium (II) phosphate
   - B. chromium (III) phosphate
   - C. chromium (II) phosphide
   - D. chromium (III) phosphide
   
   B
   
   Cr³⁺ (aq) + P₄O₉⁻ (aq) → Cr³⁺ (PO₄)³⁻ × 3
   → Cr³⁺ (PO₄)³⁻

4. Which is the formula for magnesium sulfide?
   - A. MgS
   - B. MgSO₃
   - C. MnS
   - D. MnSO₃
   
   A
   
   Mg²⁺ (aq) + S²⁻ (aq) → Mg₂S₂ → Mg₃S

5. Which formula correctly represents the compound calcium hydroxide?
   - A. CaOH
   - B. Ca₂OH
   - C. CaOH₂
   - D. Ca(OH)₂
   
   D
   
   Ca²⁺ (aq) + (OH⁻)²⁻ (aq) → Ca₁(COH)₂ → Ca(OH)₂

6. What is the correct formula for ammonium carbonate?
   - A. NH₄(CO₃)₂
   - B. NH₄CO₃
   - C. (NH₄)₂(CO₃)₂
   - D. (NH₄)₂CO₃
   
   D
   
   (NH₄)⁺ (aq) + (CO₃)²⁻ (aq) → (NH₄)₂(CO₃)₁ → (NH₄)₂CO₃

7. The correct formula for calcium phosphate is
   - A. CaPO₄
   - B. Ca₂(PO₄)₃
   - C. Ca₃P₂
   - D. Ca₃(PO₄)₂
   
   D
   
   Ca³⁺ (aq) + (PO₄)³⁻ (aq) → Ca₃(PO₄)₂

8. The correct name of the compound with the formula PbO₂ is
   - A. lead (I) oxide
   - B. lead (II) oxide
   - C. lead (III) oxide
   - D. lead (IV) oxide
   
   D
   
   Pb²⁺ (aq) + O₂⁻ (aq) × 2 → Pb⁴⁺ (aq)⁰⁻²⁻

9. Which is for SnPO₄? B) tin (I) phosphate
   - A) tin phosphite
   - B) tin (I) phosphite
   - C) tin (II) phosphite
   - D) tin (III) phosphite

10. Which has only one charge? B) Zn
    - A) Co
    - B) Zn
    - C) Fe
    - D) Mn
<table>
<thead>
<tr>
<th>Compound</th>
<th>Cations</th>
<th>Anions</th>
<th>Covalent Bond</th>
<th>Ionic Bond</th>
</tr>
</thead>
<tbody>
<tr>
<td>HgP₂</td>
<td>Hg⁺²</td>
<td>P⁻³</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Hg₅O₂</td>
<td>Hg⁺²</td>
<td>O²⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Ni₂O₃</td>
<td>Ni⁺³</td>
<td>O²⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Cu₂S</td>
<td>Cu⁺²</td>
<td>S⁻²</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Ag⁺⁺</td>
<td>Ag⁺⁺</td>
<td>Cl⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Al₂(SO₄)₃</td>
<td>Al⁺³</td>
<td>SO₄²⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Ca₃P₂O₈</td>
<td>Ca⁺²</td>
<td>PO₄³⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Mg₂(C₂O₄)₃</td>
<td>Mg⁺²</td>
<td>C₂O₄²⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Na₂CO₃</td>
<td>Na⁺⁺</td>
<td>CO₃²⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>K₂SO₄</td>
<td>K⁺⁺</td>
<td>SO₄²⁻</td>
<td>☒</td>
<td>☒</td>
</tr>
</tbody>
</table>

2. Give the formula or name. Also show the correct cations and anions (20 pt total):

- e-Transfer Full Transfer:
### Question: The following answers are wrong. Give the reasons and the correct answers (7 pts total):

<table>
<thead>
<tr>
<th>Question</th>
<th>Wrong answer</th>
<th>What's wrong (0.5 pt each box)</th>
<th>Correct answer (0.5 pt each box)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (II) oxide</td>
<td>Fe₂O₂</td>
<td>Did not divide by 2</td>
<td>FeO</td>
</tr>
<tr>
<td>Chromium (VI) Phosphate</td>
<td>Cr₂P₂</td>
<td>Phosphate should be (PO₄)³⁻ not p³⁻ (phosphide)</td>
<td>Cr₂(PO₄)₂</td>
</tr>
<tr>
<td>PbPO₄</td>
<td>Lead (IV) phosphate</td>
<td>Did not underline &amp; put ( IV) around poly, just brought &quot;IV&quot; to the top.</td>
<td>Lead(III) phosphate</td>
</tr>
<tr>
<td>NiOH</td>
<td>Nickel Hydroxide</td>
<td>Did not put roman numeral for nickel (multiple charge)</td>
<td>Nickel(II) hydroxide</td>
</tr>
<tr>
<td>ZnSe</td>
<td>Zinc (II) Selenide</td>
<td>Zn doesn't need roman numeral (only one charge)</td>
<td>Zinc selenide</td>
</tr>
<tr>
<td>SnSO₄</td>
<td>Sn₂SO₄</td>
<td>Did not take away ( ) when taking away <code>1</code>²</td>
<td>SnSO₄</td>
</tr>
<tr>
<td>Au₂S₂</td>
<td></td>
<td>Did not cross over / Buld do up - &amp; down</td>
<td>Au₂S₃</td>
</tr>
</tbody>
</table>

### Fill in the box (3 pts total):

<table>
<thead>
<tr>
<th>Combining Ions + Cross Work (0.75 pt)</th>
<th>Formula</th>
<th># of Cations : # of Anions</th>
<th>Total +ve Charge</th>
<th>Total -ve Charge</th>
<th>Total Charge of Ionic Cpd</th>
<th>Balanced Ionic Equation (1 pt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbonate ion and Chromium (VI) ion</td>
<td>Cr₂(C₂O₄)₆²⁻</td>
<td>1Crˢ⁺ : 3(C₂O₄)⁻² = +6</td>
<td>3⁻²</td>
<td>+6 + (-6)</td>
<td>0</td>
<td>→ Cr₂(C₂O₄)₃</td>
</tr>
</tbody>
</table>