

# 2023 Chemistry 12 Final Exam

## Exam Information:

- Multiple Choice: **Wednesday, January 25**    Written: **Thursday, January 26**
- This final exam is worth **15%** of your overall mark. If it is higher than **one of** your unit test scores, it will **also** replace that unit test score

## Exam Breakdown:

Reaction Kinetics	10 Multiple Choice	2 Written
Equilibrium	10 MC	2 W
Solubility Equilibrium	10 MC	2 W
Acids & Bases	15 MC	3 W
Electrochemistry	10 MC	2 W

/55

/40

**Total:**

/95

## Topics:

<b>Reaction Kinetics</b>	<ul style="list-style-type: none"><li>• Calculating Rates</li><li>• Measuring Rates</li><li>• Factors Affecting Rates</li><li>• Collision Theory</li><li>• Activation Energy</li><li>• Potential Energy Diagrams</li><li>• Catalysts</li><li>• Mechanisms</li></ul>
<b>Equilibrium</b>	<ul style="list-style-type: none"><li>• Reverse and Forward Rates</li><li>• Spontaneity</li><li>• Le Châtelier's Principle</li><li>• Equilibrium Graphs</li><li>• The Haber-Bosch Process</li><li>• <math>K_{eq}</math></li><li>• ICE Tables</li><li>• Trial <math>K_{eq}</math></li></ul>
<b>Solubility Equilibrium</b>	<ul style="list-style-type: none"><li>• Solutions Vocab &amp; Calculations</li><li>• Predicting Solubility</li><li>• Writing Equations</li><li>• Forming a Precipitate</li><li>• Solubility Product Constant (One Source of Ions)</li><li>• One Source vs. Two Source Solubility Problems</li><li>• Challenging Solubility Problems</li><li>• Prediction of Forming a Precipitate</li><li>• Common Ion Effect</li></ul>

<b>Acids &amp; Bases</b>	<ul style="list-style-type: none"> <li>• Properties of Acids and Bases</li> <li>• Definitions of Acids and Bases</li> <li>• Conjugate Acid-Base Pairs</li> <li>• Amphiprotic Substances</li> <li>• Strength of Acids and Bases</li> <li>• <math>K_a</math>, <math>K_b</math></li> <li>• Ionization of Water</li> <li>• Relative Strengths of Brønsted-Lowry Acids and Bases</li> <li>• pH and pOH</li> <li>• Antilog</li> <li>• <math>K_a</math> and <math>K_b</math> Calculations</li> <li>• Hydrolysis</li> <li>• Buffers</li> <li>• Titrations</li> </ul>
<b>Electrochemistry</b>	<ul style="list-style-type: none"> <li>• Oxidation Numbers</li> <li>• Electron gain and loss</li> <li>• Agents</li> <li>• Half-Reactions</li> <li>• Balancing Redox Reactions</li> <li>• SRP Table</li> <li>• Electrochemical Cell</li> <li>• Standard Cell Potentials</li> <li>• Electrolytic Cells</li> </ul>

#### Things you can use to study:

- Checkpoints
- Worksheets
- Hebden Workbook questions
- Unit Reviews
- Practice Tests
- Past tests (view during flex or by appointment)

#### Resource “cheat” sheet:

- You will be allowed one one-sided 8.5 x 11 **hand-written** paper to bring in for your final exam.
- It **must** be handed in before the first exam is written. If you fail to do so, you will not be allowed a resource sheet for your final exam.
- It will not be returned to you after the exam.
- Anything can be included on the resource sheet including encouraging messages, inspiring quotes and examples/diagrams.
- Use it in a way that will be advantageous to you. **Don't pack it from edge to edge with information.** Include hints and reminders for concepts that you find confusing or challenging.

