Iodine Clock Paper Scoring Rubric

Name __________________________

I. **Introduction/objective (individual), 20 points maximum.**

<table>
<thead>
<tr>
<th>Component</th>
<th>Deductions (pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Copies material from handout or from another source without referencing.</td>
<td></td>
</tr>
<tr>
<td>* Assumes too much on the part of the reader – does not write for the intended audience.</td>
<td></td>
</tr>
<tr>
<td>* Experiment goals and objectives are incompletely described</td>
<td></td>
</tr>
<tr>
<td>* Makes incorrect statements</td>
<td></td>
</tr>
<tr>
<td>* Spelling errors</td>
<td></td>
</tr>
<tr>
<td>* Grammatical Errors</td>
<td></td>
</tr>
</tbody>
</table>

II. **Experimental Design (team), 20 points**

<table>
<thead>
<tr>
<th>Component</th>
<th>Deductions (pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Does not identify hypotheses</td>
<td></td>
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<tr>
<td>* Hypotheses are unreasonable</td>
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<tr>
<td>* Too few hypotheses tested</td>
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<tr>
<td>* Does not explain reasoning behind the hypotheses.</td>
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<tr>
<td>* Does not indicate how stated hypotheses will be tested.</td>
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<tr>
<td>* Does not adequately describe the experimental procedures used. (Should be described completely enough to allow someone else to try and reproduce your results).</td>
<td></td>
</tr>
<tr>
<td>* Does not have multiple trials to ensure reproducible results</td>
<td></td>
</tr>
<tr>
<td>* Spelling errors and grammatical errors</td>
<td></td>
</tr>
</tbody>
</table>

III. **Data and Calculations (team), 20 points**

<table>
<thead>
<tr>
<th>Component</th>
<th>Deductions (pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Data not in table form, not neat or organized</td>
<td></td>
</tr>
<tr>
<td>* Missing units</td>
<td></td>
</tr>
<tr>
<td>* Significant Figure Errors</td>
<td></td>
</tr>
<tr>
<td>* Calculations (if any) not labeled</td>
<td></td>
</tr>
<tr>
<td>* Calculations (if any) not well organized or neat.</td>
<td></td>
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<tr>
<td>* Graph errors</td>
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<tr>
<td>* Graph does not have an informative/appropriate title</td>
<td></td>
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<tr>
<td>* Axes not labeled fully</td>
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<tr>
<td>* Inappropriate regression lines</td>
<td></td>
</tr>
<tr>
<td>* Other Errors</td>
<td></td>
</tr>
<tr>
<td>* Errors in calculations (if any)</td>
<td></td>
</tr>
</tbody>
</table>

IV. **Analysis (individual), 20 points**

<table>
<thead>
<tr>
<th>Component</th>
<th>Deductions (pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Analysis does not begin with a summary of the experimental findings</td>
<td></td>
</tr>
<tr>
<td>* Conclusions are not substantiated with <em>specific</em> numerical data</td>
<td></td>
</tr>
<tr>
<td>* Errors in data interpretation</td>
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<tr>
<td>* Does not compare experimental results to original hypotheses.</td>
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<tr>
<td>* Does not discuss the <em>precision</em> of the measurements.</td>
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<tr>
<td>* Does not develop a valid quantitative relationship involving the concentrations of all reactants (I(^-), S(_2)O(_8)^2- and S(_2)O(_8)^2-) that can predict the time of the iodine clock reaction</td>
<td></td>
</tr>
<tr>
<td>* Does not develop a valid quantitative relationship involving <em>temperature</em> that can predict the time of the iodine clock reaction</td>
<td></td>
</tr>
<tr>
<td>* Spelling errors</td>
<td></td>
</tr>
<tr>
<td>* Grammatical Errors</td>
<td></td>
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</tbody>
</table>

**Total Score:  / 80 points**