**AP Chemistry Unit 7 Problem Sets**

**Zumdahl Ch. 12**

**Problem Set 1 reaction rates**

|  |  |
| --- | --- |
| **1** | **2** |
| Define reaction rate. Distinguish between the initial rate, average rate, and instantaneous rate of a chemical reaction. Which of these is usually the fastest? | Explain how each of the following properties generally affects the rate of a chemical reaction based on Collision Theory:   1. Concentration 2. Temperature 3. Particle size (solids) 4. Catalysis |
| **3** | **4** |
|  |  |
| **5** | **6** |
|  |  |
| **7** | **8** |
|  |  |
| **9** | |
|  |  |
| **10** | |
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**Problem Set 2 Differential Rate Laws**

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| **1** | **2** |
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| **3** | **4** |
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| **5** | **6** |
|  |  |
| **7** | **8** |
|  |  |
| **9** | **10** |
|  |  |
| **11** | |
|  |  |

**Problem Set 3 Integrated Rate Laws**

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| **1** | **2** |
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| **3** | **4** |
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| **5** | **6** |
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| **7** | **8** |
|  |  |
| **9** | **10** |
|  |  |
| **11** | **12** |
|  |  |

**Problem Set 4 Collision/Transition State Theory and Reaction Mechanisms**

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| **1** | **2** |
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| **3** | **4** |
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| **5** | **6** |
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| **7** | **8** |
|  |  |
| **9** | **10** |
|  |  |
| **11** | **12** |
|  |  |
| **13** | **14** |
|  |  |
| **15** | **16** |
|  |  |
| **17** | **18** |
|  |  |