**Year 11 ATAR Chemistry**

Investigation – Validation Test

Decomposition of hydrogen peroxide

NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TEACHER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

MARKS: \_\_\_\_\_ / 14

**Answer each question in the space provided.**

1. Using a diagram, show the effect of a catalyst on the rate of a typical endothermic chemical reaction.

(3 marks)

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1. Explain how catalysts can be used to increase the rate of a chemical reaction. (2 marks)

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1. Consider the following data showing an experiment where another catalyst (Catalyst X) was added to a 10 mL solution of hydrogen peroxide and the evolution of oxygen gas measured over a period of 40 seconds.

Chart, line chart

Description automatically generated

1. From the graph, determine the reaction rate for the time period between 15 seconds and 30 seconds. (3 marks)
2. Predict how long it would take for 10 mL of oxygen gas to be evolved. (1 mark)
3. What are the issues involved with performing experiments where gas needs to be collected? What is an idea for mitigating these issues? (3 marks)

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1. This investigation looked into the application of catalysts in contact lenses. What are two other applications of how catalysts can be useful? (2 marks)

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**End of Validation Test**