

Grade 10 Unit 9 Quiz: Competition Synthesis and Capstone

Cumulative reasoning, design, evidence quality, and transfer

30 minutes. Calculator optional. Work from stated evidence only; no item asks for a real laboratory procedure or product-use claim.

1. Which claim is directly supported by a table with repeated trials? [1 pts]

- A. A stated pattern occurred under stated conditions.
- B. A universal mechanism is proven.
- C. Product safety is proven.
- D. All future trials will match exactly.

2. A mass decreases from 10.00 g to 9.98 g on an instrument with ± 0.03 g uncertainty. What comparison is supported? [2 pts]

3. Identify an independent variable, dependent variable, and one controlled variable for a paper-model comparison of concentration and reaction rate. [2 pts]

4. A graph's slope changes from steep to shallow. State a rate conclusion and one plausible model explanation. [2 pts]

5. Two groups use different endpoint descriptions. Give one improvement to increase reliability and explain why. [2 pts]

6. A calculation gives a positive cell potential. State one conclusion it supports and one conclusion it does not support. [2 pts]

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7. A team argues that one data point proves a design is best. Identify one evidence weakness and one next measurement. [2 pts]
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8. Write a brief claim-evidence-reasoning response: A fictional material has lower mass loss than a comparison after the same stated exposure. Make a bounded claim, cite evidence, and name one limitation. [3 pts]
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