Thermochemistry

Answer Key

1. **Answer**: A

Explanation: The value of ΔH is negative. Therefore, the reaction is exothermic or heat-releasing.

2. **Answer:** A

Explanation: The entire reaction was multiplied by $\frac{1}{2}$. Therefore, ΔH must also be halved.

3. **Answer:** C

Explanation: Option C is incorrect because -566 kJ/mol is the ΔH per mole of O_2 and not for 2 moles. Even though options B and D are expressed in grams, they are still correct because 56 g of CO still corresponds to 2 moles of CO, and 32 g of O_2 still corresponds to 1 mole of O_2, which is consistent with the expected factor.

4. **Answer:** A

Explanation: $\Delta H = (98\ g\ CO_{(g)})(\frac{1\ mol\ CO_{(g)}}{28\ g\ CO_{(g)}})(\frac{-566\ kJ}{2\ mol\ CO_{(g)}}) = -990.5\ kJ$

5. **Answer:** B

Explanation: $\Delta H = (1.5\ mol\ CO_{2(g)})(\frac{-566\ kJ}{2\ mol\ CO_{2(g)}}) = -424.5\ kJ$