Lab 6 (Exp. 12: Heat of Rxn) Post-Lab Quiz

Due Nov 4 at 11:59pm **Points** 80 **Questions** 8
Time Limit None **Allowed Attempts** 3

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Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	11 minutes	60 out of 80

ⓘ Answers will be shown after your last attempt

Score for this attempt: **60** out of 80
Submitted Nov 4 at 11:44pm
This attempt took 11 minutes.

Question 1 — 10 / 10 pts

A 100.0 mL sample of 0.300 M NaOH is mixed with a 100.0 mL sample of 0.300 M HNO_3 in a coffee cup calorimeter. If both solutions were initially at 35.00°C and the temperature of the resulting solution was recorded as 37.00°C, determine the $\Delta H°_{rxn}$ (in units of kJ/mol NaOH) for the neutralization reaction between aqueous NaOH and HCl. Assume 1) that no heat is lost to the calorimeter or the surroundings, and 2) that the density and the heat capacity of the resulting solution are the same as water.

- (selected) -55.7 kJ/mol NaOH

Correct

- -169 kJ/mol NaOH
- -16.7 kJ/mol NaOH
- -27.9 kJ/mol NaOH
- - 34.4 kJ/mol NaOH

Incorrect

Question 2 — 0 / 10 pts

A student is preparing to perform a series of calorimetry experiments. She first wishes to determine the calorimeter constant (C_{cal}) for her coffee cup calorimeter. She pours a 50.0 mL sample of water at 345 K into the calorimeter containing a 50.0 mL sample of water at 298 K. She carefully records the final temperature of the water as 317 K. What is the value of C_{cal} for the calorimeter?

- (selected) 19 J/K

Incorrect

- 28 J/K
- 99 J/K
- 21 J/K
- 76 J/K

Question 3 — 10 / 10 pts

A calorimeter is an apparatus designed to measure heat changes from chemical reactions.

- (selected) True
- False

Question 4 — 10 / 10 pts

Reactions that produce heat are known as exothermic reactions. Exothermic reactions cause the temperature to lower inside a calorimeter.

- True
- (selected) False

Question 5 — 10 / 10 pts

Part 1 of this experiment seeks to obtain what quantity?

- (selected) The amount of heat absorbed by the cup.
- The amount of heat absorbed by the cup and reaction mixture.
- The specific heat of water

Question 6 — 10 / 10 pts

The theoretical value for the heat produced when a strong acid reacts with a strong base in a neutralization reaction is -56.7 KJ per mole of water.

- (selected) True
- False

Incorrect

Question 7 — 0 / 10 pts

In this lab you will mix two solutions at time 4 minutes. You will have to replace the lid quickly and to measure any temperature change. How will you be able to determine the temperature at time of mixing?

- (selected) You will directly measure as you mix.
- You will extrapolate the lines forward or backward from your graph.
- Use the quadratic equation to solve.

Question 8 — 10 / 10 pts

Give the net ionic equation for the reaction (if any) that occurs when aqueous solutions of H_2SO_4 and KOH are mixed.

- (selected) $H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$

Correct

- $2\ K^+(aq) + SO_4^{2-}(aq) \rightarrow K_2SO_4(s)$
- $H^+(aq) + OH^-(aq) + 2\ K^+(aq) + SO_4^{2-}(aq) \rightarrow H_2O(l) + K_2SO_4(s)$
- $H_2^{2+}(aq) + OH^-(aq) \rightarrow H_2(OH)_2(l)$
- No reaction occurs.

Quiz Score: **60** out of 80

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