







Final Score:

85

School \_\_\_\_\_ Team# \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

## Can't Judge a Powder

### Virginia Division B Science Olympiad Tournament 2010

*On your observation sheet :( with the red pen)*

- ✓ Under the column **Observation Number** include the **number of the observation** that fully supports the answer. Place a number for **all** the data that supports the answer
- ✓ Support with observation numbers that apply. Inaccurate or inapplicable observations will be marked as zero.
- ✓ Any remembered answers are to be written in red pen below the observations that were written in blue pen. They should be numbered and that number should be written under the observation number column in the question paper.

#	Questions	Observation Number	Judges use only					
A	Is the substance in crystalline or amorphous form?		5	4	3	2	1	0
B	What is the color of the substance?		5	4	3	2	1	0
C	Is the substance sparingly soluble or completely soluble in water?		5	4	3	2	1	0
D	Was there a change in temperature of water when the substance dissolved in water?		5	4	3	2	1	0
E	As the substance dissolved in water, does the substance dissolve exothermically or endothermically?		5	4	3	2	1	0
F	Did the substance conduct electricity in when dissolved in water?		5	4	3	2	1	0
G	What is the pH of an aqueous solution of the substance?		5	4	3	2	1	0
H	Was the aqueous solution of the substance acidic, basic or neutral?		5	4	3	2	1	0
I	Was there a gas produced when HCl was added to the solid substance?		5	4	3	2	1	0
J	What is the pH of the solution when HCl was added to an aqueous solution of the substance?		5	4	3	2	1	0
K	Was there a reaction between HCl and the aqueous solution of the substance?		5	4	3	2	1	0
L	Was there a reaction between NaOH and the aqueous solution of the substance?		5	4	3	2	1	0
M	Did the powder appear to be hygroscopic?		5	4	3	2	1	0
N	Was there a precipitate formation between the aqueous solution and calcium nitrate?		5	4	3	2	1	0
O	If a precipitate was formed, what color was it?		5	4	3	2	1	0
P	Is the substance hydrophobic or hydrophilic?		5	4	3	2	1	0
Q	Use this number to mark your best observation that was not asked		5	4	3	2	1	0

#	Answer Key to Questions	Observation Number	Judges use only					
			5	4	3	2	1	0
<b>A</b>	Is the substance in crystalline or amorphous form?		5	4	3	2	1	0
	The substance has small crystals or the substance is crystalline powder ( under lens)							
<b>B</b>	What is the color of the substance?		5	4	3	2	1	0
	The substance is white in color							
<b>C</b>	Is the substance sparingly soluble or completely soluble in water?		5	4	3	2	1	0
	A pinch_____ of the substance was completely soluble in approximately ____ml of water							
<b>D</b>	Was there a change in temperature of water when the substance dissolved in water?		5	4	3	2	1	0
	The temperature of water alone____. The temperature of solution _____							
<b>E</b>	As the substance dissolved in water, does the substance dissolve exothermically or endothermically?		5	4	3	2	1	0
	The temperature changes from _ to ___ and hence the substance dissolves exothermically.							
<b>F</b>	Is the substance conduct electricity when dissolved in water?		5	4	3	2	1	0
	The aqueous solution conducts current ( and hence the substance is ionic)							
<b>G</b>	What is the pH of an aqueous solution of the substance?		5	4	3	2	1	0
	The aqueous solution has a pH of more than 10							
<b>H</b>	Was the aqueous solution of the substance acidic, basic or neutral?		5	4	3	2	1	0
	The aqueous solution has a pH of 10 ( hence it is basic)							
<b>I</b>	Was there a gas produced when HCl was added to the solid substance?		5	4	3	2	1	0
	Gas bubbles were formed when HCl was added to the solid substance.							

<b>J</b>	What is the pH of the solution when HCl was added to an aqueous solution of the substance?		5	4	3	2	1	0
	The pH of the solution dropped from 10 ( only water) to ____when acid was added.							
<b>K</b>	Was there a reaction between HCl and the aqueous solution of the substance?		5	4	3	2	1	0
	Gas bubbles were formed							
<b>L</b>	Was there a reaction between NaOH and the aqueous solution of the substance?		5	4	3	2	1	0
	There is no visible change when NaOH is added to an aqueous solution of the substance.							
<b>M</b>	Did the powder appear to be hygroscopic?		5	4	3	2	1	0
	The substance appears to c lump (and hence is hygroscopic.)							
<b>N</b>	Was there a precipitate formation between the aqueous solution and calcium nitrate?		5	4	3	2	1	0
	A white colored (jelloy like ) substance was formed							
<b>O</b>	If a precipitate was formed, what color was it?		5	4	3	2	1	0
	White							
<b>P</b>	Is the substance hydrophobic or hydrophilic?							
	It dissolved in water and hence was hydrophilic.							
<b>Q</b>	Use this number to mark your best observation that was not asked							