

ST4

Name:

## Lab Test Review

### I) Parts of a lab report:

A) Aim:

MUST always start with **TO** and describes the purpose of the lab

To determine

To calculate

To identify

To find

To NEUTRALIZE

B) Hypothesis:

A prediction of what will occur or how you will accomplish the experiment, supported with scientific reasoning.

Starts with **If....Then** (because) or The hypothesis is....

If the substance to be neutralized is an acid, then a base must be used

If unknown is an base, then an acid must be used to neutralize it.

If the substance is neutralized then it will be yellow.

\*\*\*How will you neutralize it\*\*\*

\*\*\* How will you know it is neutral??\*\*\*

C) Materials:

A list of all materials used, using proper scientific names, volumes, quantities.

Point form, (NO NUMBERS)

Specific quantities

Include size of materials

D) Procedure:

NUMBER your steps (one step per line)

Specific-include sizes, quantities

ACTION WORDS (Do, pour, put, drop, swirl, etc.)

Should sound like a recipe!!!

USE REPEAT STEPS- do not write all the steps again

MUST WRITE - RECORD OBSERVATIONS or results

**\*\*\*\*\* DO NOT USE STIRRING ROD FOR SWIRL!!!!**

**\*\*\* NO PERSONAL PRONOUNS IN A LAB (I, WE, YOU, etc)**

E) Results:

Table drawn with a ruler Neat

Must have title for the entire table

Headings for all columns or rows

Units (drops/ml/g)

MUST BE SPECIFIC OBSERVATIONS

EX: Light turned on, turned RED, Gas escaped, formed bubbles etc...

F) Conclusion:

5 steps

**1-Restate aim.....word for word**

**2.Restate hypothesis....word for word**

**3. Was hypothesis correct/incorrect and explain**

**4. EXPLAINING THE RESULTS- describe the results, provide answers, discuss the results with purpose of lab**

**5. ERRORS: At least 2- must not be personal pronouns.**

**NO PERSONAL PRONOUNS!!!!!! I WE YOU US**

**II) Labs to know:**

- **Using indicators to identify the pH of solutions.**
- **Neutralizing a solution.**

Task 1	To identify the pH of an unknown solution using Universal indicator.
Material	Buffer solutions of known pH (1-12) Unknown solution 96 well plate Universal indicator
Procedure	<ol style="list-style-type: none"><li>1. Place 3 drops of buffer solutions 1-12 in wells 1-12 respectively</li><li>2. Place one drop of Universal indicator in each buffer solution</li><li>3. Record Colors in chart</li><li>4. Place 3 drops of unknown in well</li><li>5. Place 1 drop of Universal indicator in unknown</li><li>6. Match colour of unknown to colour of buffer solutions to determine pH</li><li>7. Record ph of unknown</li></ol>
Results	Make a colour chart to represent all the colours of the buffer solutions and their respective pH. Give it a descriptive title.  Indicate the colour of your unknown and which pH value it corresponds with

Task 2	To neutralize an unknown solution using the indicator phenol red.
Material	<ul style="list-style-type: none"> <li>● Phenol Red</li> <li>● Spot plate</li> <li>● Stirring rod</li> <li>● 10ml beaker</li> <li>● Pipette with Acid: HCl</li> <li>● Pipette with Base: NaOH</li> <li>● Pipette with Neutral/ Salt: NaCl</li> <li>● Pipette with UNKNOWN</li> </ul>
Procedure	<ol style="list-style-type: none"> <li>1. Place 5 drops of HCl in spot plate</li> <li>2. Add 1 drops of phenol red to HCl</li> <li>3. Note colour change</li> <li>4. Repeat steps 1-4 for NaOH and NaCl and unknown</li> <li>5. Match colour of unknown to determine its nature (acid, base or salt)</li> <li>6. Add required number of drops of unknown to 10 ml beaker</li> <li>7. Add 2 drops of phenol red to unknown</li> <li>8. Neutralize unknown using the appropriate solution (if your unknown is an acid then add a BASE, if your unknown is a base then add an ACID)</li> <li>9. Add appropriate solution one drop at a time and swirl after each drop</li> <li>10. Stop adding drops when the solution matches the colour of the NaCl (neutral solution)</li> </ol>
Results	<p>In a table, list the following things:</p> <ol style="list-style-type: none"> <li>1. The colour each solution turned with the indicator (acid, base, salt)</li> <li>2. The colour your unknown turned with the indicator</li> <li>3. The nature of your unknown (acid, base or salt)</li> <li>4. What you used to neutralize your unknown (give the molecular formula of the acid or the base)</li> <li>5. How many drops were needed to neutralize your unknown (drops needed to achieve the same colour as the neutral (NaCl) solution)</li> </ol>