Name:.....	Mark: 10
Class:.....	CHEMISTRY
Limiting and Excess reactant -Practical-1	GRADE 11 General

Objective:

To determine the excess and limiting reagent in a chemical reaction.

To apply the concept of limiting and excess reactants in mole ratio calculations.

Lab safety rules.

- Always wear safety goggles and gloves
- Do not inhale released vapors.
- Handle chemicals carefully.
- Never taste any substance used in the lab.

Materials

- Sodium carbonate 15g
- Acetic acid-60ml
- Beaker
- Test tube
- Balance
- Spatula

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Procedure

1. Add 10 ml acetic acid to a test tube

2. Add about 2g (1 spatula) sodium carbonate in to 10ml acetic acid and record your observations.

Trial number	Substances	Observation (acetic acid in excess/sodium carbonate excess)
1	10 ml acetic acid($C_2H_4O_2$)+ 2g of sodium carbonate (Na_2CO_3)	
2	25 ml acetic acid ($C_2H_4O_2$)+ + 2g sodium carbonate(Na_2CO_3)	

Analyze and conclude:

$$2C_2H_4O_2 + Na_2CO_3 \rightarrow 2\ NaC_2H_3O_2 + H_2O + CO_2$$

(a) Mole ratio :……..

(b) If **10 moles** of acetic acid($C_2H_4O_2$) mixed with **10 moles** of (Na_2CO_3) , **which reagent will be excess reagent, and which one will be limiting reagent ? Why?**

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