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KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**GENERAL EDUCATION AND
TRAINING**

GRADE 8

NATURAL SCIENCES
Formal Practical Task

Term 2

2025

MARKS: 20

DURATION: 1 hour

Instructions and Information

1. Answer **ALL** questions as instructed.
2. Number your answers exactly as the questions are numbered.
3. Write neatly and legibly.

N.B. This Practical Task consists of 2 pages (excluding cover page)



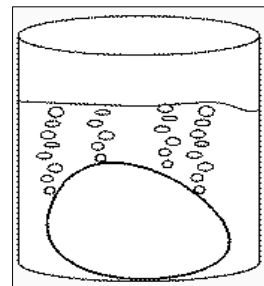
PART A

Aim

Investigate the chemical reaction that takes place when a whole egg is placed in white vinegar.

Apparatus needed:

- One egg (hard boiled is less messy if you accidentally break it, but you can use a raw one)
- One cup vinegar (acetic acid)
- Clear jar or glass or beaker



Method

Step 1:

- Pour 1 cup of white vinegar into a jar and place the egg (shell made of calcium carbonate) in the vinegar and wait a few minutes.
- Observe what is happening on the surface of the egg.

1. What observable evidence is there that a chemical reaction took place? (1)
 2. Write an investigative question for this investigation. (1)
 3. Which hypothesis is best suited for this investigation? (Write only the letter of your choice).
- A The products formed when calcium carbonate (in the eggshell) reacts with white vinegar, is calcium acetate, carbon dioxide and water.
- B Egg yolk will react with vinegar to produce oxygen bubbles. (1)
4. Identify the independent variable. (1)

Step 2:

- Leave the egg in the vinegar for one day.
- Look at the experiment again.
- Carefully remove the egg out of the vinegar with a large spoon.
- Touch the surface of the egg.

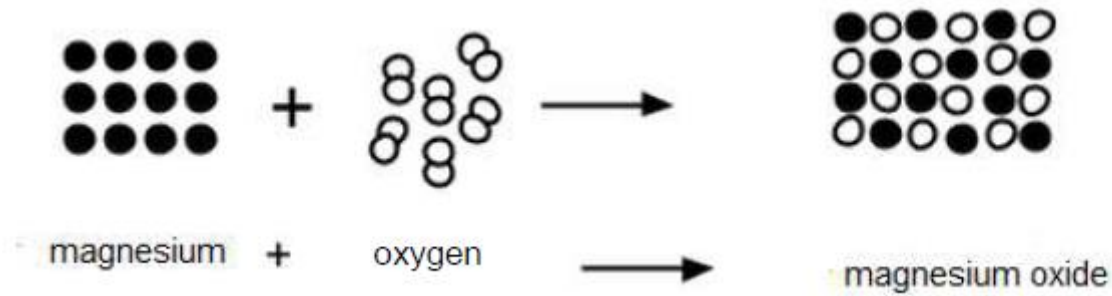
5. Record your observations. What did the egg look and feel like after one day? (2)
 6. Explain why the egg underwent these changes observed in question 5. (2)
 7. The experiment is repeated by another learner using a new egg. She does not have enough vinegar to fully cover the egg, and decided to add tap water to the small amount of vinegar inside the beaker.
- 7.1 What scientific reason did the second learner have for repeating the experiment? (1)
- 7.2 Identify one variable that needed to be controlled. (1)

- 7.3 The conclusion reached by the second learner was that calcium carbonate in eggshell does not react with white vinegar. Explain why this conclusion is invalid. (2)

TOTAL PART A: [12]

PART B

1. A chemical reaction is represented by the following diagram:



- 1.1 Write the names of the **reactants** in the above equation. (2)
- 1.2 Which of the **reactants** is the least dense at room temperature?
Give a reason for your answer. (2)
- 1.3 In which phase does the **product** occur? Give a reason for your answer visible in the diagram. (2)
- 1.4 Describe in which way the atoms in this reaction are the same before and after the reaction. (2)

TOTAL PART A: [8]

TOTAL: [20]