# ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

**General Certificate of Education Ordinary Level**

# COMBINED SCIENCE 4003/3

PAPER 3 (Practical Test)

**JUNE 2019 SESSION** 1 hour 30 minutes

Candidates answer on the question paper

Additional materials:
As listed in instructions to Supervisors
Calculator (optional)

**INSTRUCTIONS TO CANDIDATES**

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **both** questions.

Write your answers in the spaces provided on the question paper.

Use a sharp pencil for your drawings. Coloured pencils or crayons should not be used.

**You should record all experimental results and show the essential steps in any calculation in the spaces provided in the question paper**.

**INFORMATION FOR CANDIDATES**

The number of marks is given in brackets [ ] at the end of each question or part question.

| FOR EXAMINER'S USE | |
|---|---|
| **1** | |
| **2** | |
| **TOTAL** | |

Copyright: Zimbabwe School Examinations Council, J2019.

© ZIMSEC J2019

**1** You are required to identify nutrients present in juice **X**.
You are provided with three boiling tubes, a test tube rack, a pair of tongs, a graduated syringe, Benedict's solution, hot water bath, juice X, solution P, solution R and access to a clock.

**(a)** **(i)** Carry out the tests described in Table 1.1 below and record the observations and deductions in the table.

**Table 1.1**

| **test** | **observations** | **conclusions** |
|---|---|---|
| Add about 2 $cm^3$ of juice **X** into a boiling tube and add two drops of solution **R** to the juice. | | |
| Place about 2 $cm^3$ of juice **X** into a clean boiling tube and add about 2 $cm^3$ of Benedict's solution to the juice.<br><br>Heat the mixture in a water bath. | | |
| Place about 3 $cm^3$ of juice X into a clean boiling tube and add about 4 $cm^3$ of solution P to the juice.<br><br>Place the test tube in the hot water bath and leave it for about 3 minutes.<br><br>After the 3 minutes, pour about half of the contents into another clean boiling tube.<br><br>Add two drops of solution R to one of the portions. | | |
| Add about 2 $cm^3$ of Benedict's solution to the other portion and heat in the water bath. | | |

..... [10]

**(ii)** Identify solution **R**.

…… [1]

**(iii)** State the colour of Benedict's solution.

…….. [1]

**(iv)** State the nutrients contained in juice **X**.

……

…… [2]

**(v)** Suggest **one** advantage of drinking juice **X**.

……

…….. [1]

**(vi)** Suggest a possible identity of solution **P**.

……. [1]

**(vii)** State the process responsible for the change that occurred when solution **P** was added to the juice and the mixture heated.

…… [1]

**(viii)** Name the part of the alimentary canal where the process mentioned in **(vii)** occurs.

……. [1]

**(b)** State any two precautions that should be taken when carrying out the experiment.

……

……

……

2 **(a)** You are required to determine the resistance of a wire, **R**. **Fig.2.1** shows the circuit diagram for the circuit which the supervisor set for you.

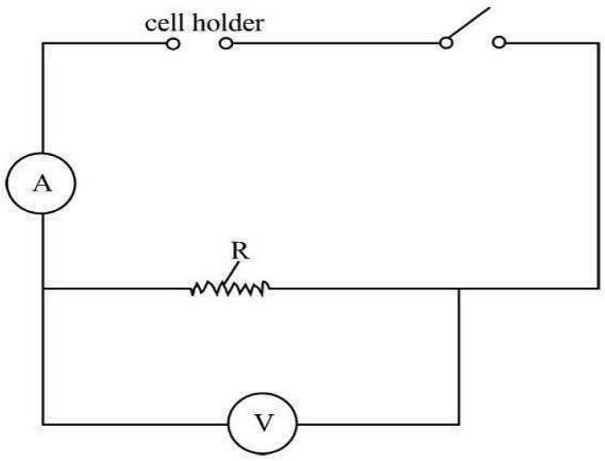



**Fig.2.1**

**(i)** Place one cell in the cell holder, close the switch and record the voltmeter and ammeter readings in **Table 2.1**.

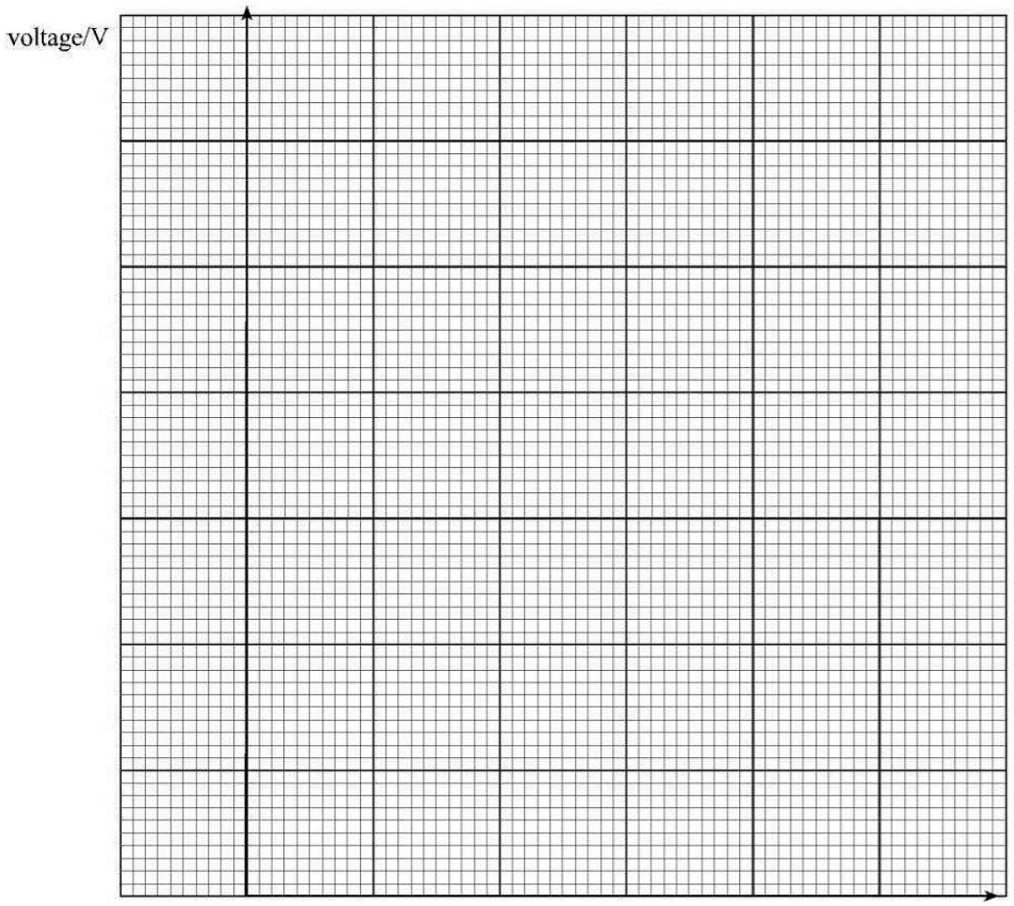
Repeat the procedure adding one cell at a time until you use four cells.

**Table 2.1**

| **number of cells** | **voltage/V** | **current/A** |
|---|---|---|
| | | |
| | | |
| | | |

[10]

**(ii)** Plot a graph of voltage (y-axis) against current (x-axis).




[3]

**(iii)** State the relationship between voltage and current.

.....

..... [1]

**(iv)** Calculate, using the graph, the resistance of wire **R**.

[2]

**(v)** Determine, clearly showing on the graph, the current when the voltage is 3.5 V.

..... [2]

**(b)** State any two sources of error in the experiment.

……
……
…….. [2]

# ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

**General Certificate of Education Ordinary Level**

## COMBINED SCIENCE 4003/1

**PAPER 1** Multiple Choice

**NOVEMBER 2019 SESSION** 1 hour

Additional materials:
Multiple Choice answer sheet
Soft clean eraser
Soft pencil (type B or HB is recommended.)
Calculator (Optional)

### INSTRUCTIONS TO CANDIDATES

Do **not** open this booklet until you are told to do so.
Write your name, centre number and candidate number on the answer sheet in the spaces provided unless this has already been done for you.
Read very carefully the instructions on the answer sheet.

### INFORMATION FOR CANDIDATES

Each correct answer will score **one** mark. A mark will **not** be deducted for a wrong answer. Any rough working should be done in this booklet.

There are **forty** questions in this paper. Answer **all** questions. For each question, there are four possible answers, **A**, **B**, **C** and **D**. Choose the one you consider correct and record your choice in soft pencil on the separate answer sheet provided.

Copyright: Zimbabwe School Examinations Council, N2019.

© ZIMSEC N2019