**REPUBLIC OF RWANDA**

**GATSIBO DISTRICT**

**SENIOR SIX END OF 2nd TERM EXAMINATIONS, 2024**

**SUBJECT: ALTERNATIVE TO PHYSICS PRACTICAL EXAM (20 MARKS)**

**COMBINATIONS:**

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|---|---|
| **PHYSICS-CHEMISTRY-MATHEMATICS** | **(PCM)** |
| **MATHEMATICS- PHYSICS- COMPUTER SCIENCE** | **(MPC)** |
| **PHYSICS –CHEMISTRY- BIOLOGY** | **(PCB)** |
| **MATHEMATICS –PHYSICS- GEOGRAPHY** | **(MPG)** |

**DURATION: 1 HOUR 30 MINUTES**

**INSTRUCTIONS:**

1) Do not open this question paper until you are told to do so.
2) Answer all questions: **20 marks**
3) Use only a **blue** or **black** pen.

**ATTEMPT ALL QUESTION**

A student investigates how the resonant length **L** of loaded wire varies with frequency **f** using a sonometer or other apparatus.

It is suggested that **f** and **L** are related by the equation $f = \frac{1}{2L}\sqrt{\frac{T}{\mu}}$ where **T** is tension of wire, **μ** is linear mass density. Design a laboratory experiment set up to test the relationship between **f** and **L.**

**a)** What is sonometer? **/2marks**

**b)** You should draw a labelled diagram showing the arrangement of your equipment. **/4marks**

**c)** In your account you should pay a particular attention to:
- i) The procedure to be followed /**2marks**
- ii) The measurements to be taken. **/1mark**
- iii) The control of variables. **/2marks**
- iv) The analysis of the data. **/3marks**
- v) Any safety precautions to be taken if need be.**/3marks**

**d)** What are the three laws of sonometer? **/3marks**

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