MUSANNZE DISTRICT
SECOND TERM 2023-2024

S6PRACTICAL PHYSICS MARKING GUIDE/20 MARKS

a. The dependent variable is **frequency f /1mark** and the independent variable is the **distance d**. **/1mark**

b. i. $\mathbf{4(d+k)=\frac{v}{f}}$

$\mathbf{(d+k)=\frac{v}{4f}}$

$\mathbf{d=\frac{v}{4f}-k}$ **/1mark**

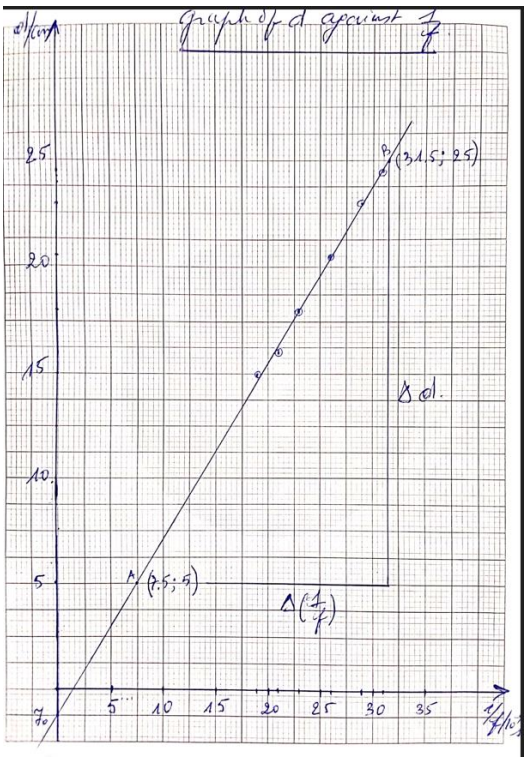
ii.A straight line is given by $\mathbf{y=mx+y_o}$

So the gradient m = $\frac{v}{4}$ **/1mark**and the intercept $\mathbf{y_o=-k}$**/1mark**

C.

f/Hz	**d/cm**	$\frac{1}{f}/10^{-4}$**s**
320	24.5	31**/0.5marks**
340	23.0	29**/0.5marks**
378	20.5	26**/0.5marks**
428	18.0	23**/0.5marks**
476	16.0	21**/0.5marks**
516	15.0	19**/0.5marks**

d.i. Graph of d against $\frac{1}{f}$



Tittle of experiment**/1mark**

Two labeled axis**/1mark**
Two scales on two axes/**1mark**
Plotted points**/3marks**
Best fit straight line**/1mark**
Tittle of the graph**/1mark**

ii.The gradient $\mathbf{m} = \frac{\Delta \mathbf{d}}{\Delta \frac{\mathbf{1}}{\mathbf{f}}}$

That is $\mathbf{m}=\frac{(25-5)\mathbf{cm}}{31.5-7.5\times10^{-4}\mathbf{s}}$**=8333.3cm/s**

Or **m=83.33m/s/1mark**

iii.The y intercept is y_o=-1.25cm**/1mark**

e.The value of $\mathbf{k=-y_o=-(-1.25cm)}$ then **k=1.25cm/1mark**

The speed of sound in air is given by $\mathbf{m} = \frac{\mathbf{v}}{\mathbf{4}}$ that is **v=4m**

And **v=4x83.33m/s=333.32m/s /1mark**

END