WAKISSHA JOINT MOCK EXAMINATIONS
MARKING GUIDE
Uganda Certificate of Education
UCE August 2019
PHYSICS 535/3
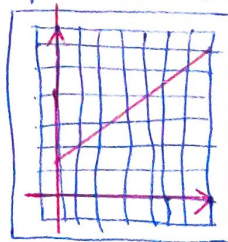
Mathking Omndang (handwritten)

No	Details	Marks
	Whole number a multiple of 5 or 2.5. (handwritten)	
No1.	R1-Recording the mass m_o value=01½mk; unit = $1\,mk$, $(10-20)g$ *whole number* ~~02~~ *or 1dp with last digit either 0 or 5.* (handwritten) $\frac{1}{2}$ R2-Recording mass, m, of the bottle with water at $h = 2.0\,cm$ value=1½mk ; ~~unit =1mk~~ *w* $(60-80)g$. *with or without unit.* (handwritten)	02 ~~02~~ 1½
	Subtotal for recording	~~04~~ 02½

— Repeating values the best recording is in to table. m values. (handwritten)   t = 38.53s

— if the apparatus can read the value then (m – m₀) marked. (handwritten)

— If m₀ or m is wrong, (m – m₀) computation is marked, if correctly performed. (handwritten)

Table of results

h(cm)	m(g)	$(m-m_0)(g)$
2.0	70	*60-80* 55
3.0	100	*90-120* 85
4.0	130	*120-150* 115
5.0	165	*120-200* 150
6.0	175	*150-230* 180
7.0	215	*200-250* 200

— m not beyond 250g. (handwritten)
— if the values of (m – m₀) are wrong, the plotting is wrong. (handwritten)
— If m₀ is not shown then m₀ = X put above (m – m₀) column. No mark for all values of (m – m₀). or more. (handwritten)

T1-Design of a table with at least three (3) columns and h values entered(1mk)		01
T2- Labelling of other columns @ 1 mk		02
T3- Recording five more values of *increasing* m to *no* decimal places. ~~1mk~~ @ 1½@		~~05~~ 07½
-Recording *six* calculated values of $(m - m_o)$ to 0 dps @½mk ~~1½mk~~		~~03~~ 07½
Subtotal for table		~~11~~ 17
G1- Tittle of the graph, A graph of $(m - m_o)$ against h *Should not block the vertical axis.* (handwritten)		01
G2- Drawing and labeling axes.@ $\frac{1}{2}$ *horizontal and should not touch the vertical axis.* (handwritten)		~~01~~ 02
G3-Suitable and convenient scale with starting values indicated. @ $\frac{1}{2}$ 1@ *- markings on the axes. - scale cover all the values in the table* *- mark at starting point* (handwritten)		~~01~~ 02
G4-Correctly plotted 6 points @= 1-mark *- we plot half or whole number in a square.* (handwritten)		~~06~~ 03
G5- Line of best fit passing through 3 correctly plotted points		~~0½~~ 01

— Should be drawn from the least or line of the graph area to the first. (handwritten)
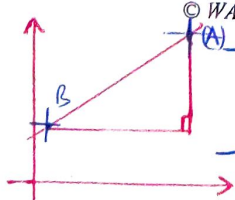
(A)— Emphasise the crosses at the points of the slope.
— Triangle starts from the first point at A and the first point from B (handwritten)

G6-method of slope (Large enough triangle) subtotal for graph work	0½ 01	
Subtotal for graph	**10**	
C1- Calculation of slope, substitution= $\frac{1}{2}$, value=**1mk**, unit =**1mk**	~~2½~~ 01½	
C2- Calculation of diameter d (subtn = $\frac{1}{2}$, value **1mk**, unit 1mk)	2½	
Subtotal for calculation	05	

C_1 – Substitution – $\frac{1}{2}$

  – Arithmetic – $\frac{1}{2}$

  – unit of gcm^{-4} – $\frac{1}{2}$

Significant figures use those from the table of results.

$$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1} \quad \frac{2}{2}$$

$$= \frac{225 - 47.5}{7.5 - 1.8}$$

$$= \frac{177.5}{5.7}$$

$$= 31.14 gcm^{-3}.$$

$$d = 1.2\sqrt{s}$$

$$= 1.2 \times \sqrt{31.14}$$

$$= 1.2 \times 5.58$$

$$= 6.7\ cm.$$

C_2 – Substitution and arithmetic (3 sf) — $\frac{1}{2}$

  – Accuracy — $\frac{1}{2}$

  $(6.0 - 7.0)$ — $\frac{1}{2}$

TOTAL FOR NUMBER ONE	**=30**

No.2		
R1-Recording the value of v ~~and unit 17.8cm~~ _with or without unit_		2½ _02_
T1-Design of table with at least 3 columns with all values entered with a unit		0l _1½_
T2 Label of the rest of columns V(cm)v/u@1/2 =01mk.		0l
T3-Recording 5 more values of V increasing @2mks		10
-Calculating 6 values of v/u to 2 dp @ $\frac{1}{2}$.		03

Table of results

(3 sfs)
(3dPs)
→ Take ~~long~~ largest quotient.

u(cm)	v(cm)	$\dfrac{v}{u}$
80	17.8	0.22
70	18.0	0.26
60	18.7	0.31
50	19.0	0.38
40	21.0	0.53
30	23.5	0.78

8·4 – 14·4
8·7 – 14·7
9·0 – 15·0
9·5 – 15·5
10·0 – 16·3
12·0 – 18·0

17

G1-Tittle of a graph of v against $\dfrac{v}{u}$		01
G2-Marking, labeling axes with units and arrows. _If there's a distortion of any axes no score for G3, G4, G5, G6._		02
G3-Suitable and convenient scale. _– starting value of $\frac{v}{u}$ = 0._ _labelling should be multiples of the scale._		02
G4-Correctly plotting 6 points @ $\frac{1}{2}$ _– If no starting value written and there's no distortion, then G4 scores. otherwise give 0._		03
G5-line of best fit		~~0½~~ 0l
G6-Method of getting slope		~~0½~~ 0l
Subtotal for G		09 __10__

C1-Calculation of the slope-substitution @= ½ Arithmetic @ ½		~~03~~ 0l
Iv reading the intercept on v axis I = 15 _– If $\frac{v}{u}$ is not starting at 0, the only unit scores._ ½ value, ½ unit		01
C2-Calculation of from $\dfrac{s+t}{2}$ = $\dfrac{12+10.0/2}{2}$		~~0l~~
Substitution = $\frac{1}{2}$ Accuracy $\frac{1}{2}$ _with or without unit_		01
$f = \left(9.0 - 11.0\right)$ cm.		__03__
TOTAL FOR NUMBER 2		30mks

No 3	R1-Reading I when $l_0 = 0.200m$ ~~2 marks~~	$\frac{2\frac{1}{2}}{02}$
	T1-Design of table with at least 3 columns with l values entered.	$1\frac{1}{2}$ 01
	T2-Labelling I(A) and $\frac{1}{I}(A^{-1})$ $\frac{1}{2}@$	01
	T3-Record 5 more values of I decreasing to 2 d.p.s $2@$	~~05~~ 10

Table of results

$l(m)$	I(A)	$\frac{1}{I}(A^{-1})$
0.200	0.24	4.2
0.300	0.22	4.5
0.400	0.20	5.0
0.500	0.18	5.6
0.600	0.16	6.3
0.700	0.14	7.1

0.16 — 0.28
0.14 — 0.24
0.12 — 0.20
0.10 — 0.18
0.08 — 0.16
0.04 — 0.14.

	- Calculating 6 values of $\frac{1}{I}$ to 1dp $\frac{1}{2}@$	03
	Subtotal for table (T)	~~17~~
	-G1-Tittle of a graph "A graph $\frac{1}{I}$ of against l	01
	G2-Drawing and labeling of axes with units	02
	G3-Suitable and convenient scale.	02
	G4-Correctly plotting 6 points $\frac{1}{2}@$	~~06~~ 03
	G5-Line of best fit	~~0½~~ 01
	G6-Method of finding the slope.	~~0½~~ 01
	Subtotal for graph G	10
	C1-Calculating slope s = substitution & arithmetic — ½ / const — ½	01
	Iv-Reading intercept with unit - value — ½ / unit — ½	01
	C2-Calculating l_0 from $c = l_0 s$ = substitution & arithmetic — ½ / const — ½	01
	Subtotal for C and Iv	03
	TOTAL FOR NUMBER 3	30mks