ITEM 1

Aim
An experiment to determine the mass of the metre rule provided

Hypothesis
Mass of metre rule provided

Independent variables
Distance of mass from one end of the metre rule

Dependent variable
Distance y and t of the mass and Centre of gravity from the knife edge respectively.

Control variable
Thickness of the metre rule

Apparatuses
1 metre rule, 1 knife edge, 1 block of wood, 650 masses, 1 piece of thread of about 30cm

Procedures
a. The block of wood is placed on the table so that it rests on its small cross-sectional area
b. A knife edge is placed on top of the block
c. The metre rule is placed on the knife edge with its calibrated side facing upwards
d. The balances point, G where the metre rule balances is recorded
e. A mass, m = 50g is suspended at x =2.0cm mark
f. The metre rule is adjusted until it balanced again
g. The distance y and z are recorded
h. Procedure (e) to (g) are repeated with m=100g, 150g ,250g,300g.
i. The results are recorded in suitable table
j. The slopes s of the graph is determined
k. The mass M of the metre rule is then calculated from $M = \dfrac{50}{5}$

Table of results

M(g)	Y(cm)	Z(cm)
50		
100		
150		
200		
250		
300		

ITEM 2

Aim:
An experiment to determine the resistance of the filament of the touch bulb

Hypothesis
The resistance of bulb in 0.95

Apparatus:

1 ammeter, 1voltmeter, 1switch, 1metre rule, 2 pieces of cell tape, constant wire, connecting wires, 1 touch bulb, double cell holder, 2 crocodile clips

Independent variable

Length x

Dependent variable

-I, V, $\frac{1}{I}$, $\frac{1}{V}$

Control variable:

Temperature of the bulb filament.

Procedure

a. The bare wire is fixed on the metre rule using sellotape
b. The circuit is connected as shown in the figure.
c. Starting with x = 0.200m, the switch is closed
d. The Ammeter reading, I and voltmeter reading v are read and recorded
e. Switch, K is then opened
f. Procedures (c) to (e) are repeated for values of x=0.300, 0.400, 0.500 and 0.600m
g. Results obtained are recorded in a table
h. Plot a graph of $\frac{1}{I}$ against $\frac{I}{V}$
i. The slope s of the graph is calculated
j. The resistance v of the bulb filament is calculated from r=s

Table of results

X(cm)	I(A)	V(v)	$\frac{1}{I}$(A⁻¹)	$\frac{1}{V}$(v⁻¹)
0.200				
0.300				
0.400				
0.500				
0.600				