

232/3
PHYSICS
(PRACTICAL)
Paper 3

MARKING SCHEME

1. a) G=50.0 mm (1 mark)
 X=0.3m (1 mark)
 Y=0.15m (1 mark)
- c) i)

Mass(g)	WeightF(N)	DistanceX(M)	$\frac{1}{X} M^{-1}$
50	0.5	0.300	3.30
70	0.7	0.214	4.67
80	0.8	0.188	5.32
90	0.9	0.167	5.99
100	1.0	0.150	6.67
120	1.2	0.125	8.00

(2 marks) (2 marks) (2 marks)

V values ± 0.2 cm

For every row, all values correct= (2 marks)

At least 4 correct (1 mark)

- iii) $S = \frac{1.2 - 0.5}{8 - 3.3} = \frac{0.7}{4.7} = 0.149 \text{ NM} \pm 0.01$
- Correct intervals (1 mark)
 Evaluation (1 mark)
 Accuracy ($\frac{1}{2}$ mark)
 Units ($\frac{1}{2}$ mark)

Total (3 marks)

- iv) $S = WY$
 $0.149 = 0.15W$
 $\frac{0.149}{0.15} = W$
 $W = 0.993 \pm 0.01$
- Correct substitution (1 mark)
 Evaluation (1 mark)
 Accuracy ($\frac{1}{2}$ mark)
 Units ($\frac{1}{2}$ mark)

Total (3 marks)

2.

L(M)	0.2	0.4	0.5	0.6	0.7	0.8	
I(A)	0.4	0.31	0.25	0.22	0.20	0.19	± 0.05
p.d(V)	1.6	1.9	2.0	2.1	2.2	2.4	± 0.1
$R = \frac{V}{I} (\Omega)$	4.0	6.13	8.00	9.55	11.00	12.63	(2 marks)
$\frac{1}{I} A^{-1}$	2.50	3.22	4.00	4.55	5.00	5.26	(2 marks)

I - Values – All correct (2 marks)

At least 4 correct (1 mark)

V – Values- All correct (2 marks)

At least 4 correct. (1 mark)

e)
$$S = \frac{11 - 4}{5 - 2.5} = \frac{7}{2.5} = 2.8 \pm 0.1$$

Correct intervals (1 mark)

Evaluation (1 mark)

Accuracy (½ mark)

Units (½ mark)

f) i) 2.8V (1 mark)

ii) -r=-3 (1 mark)

Realising -r=y intercept (1 mark)

r=3Ω - units (1 mark)

g)

