**FORM 4 PHYSICS PAPER 3**

**MARKING SCHEME**

1. (a) diameter = 2.50cm3

Height = 2.30cm

V= 

(b) (I) G = 50.0cm ±0.5cm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| X (cm) | 50. | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 |
| Y (cm) | 4.0 | 9.0 | 13.1 | 17.5 | 22.5 | 26.5 |

± 0.1

Each correct value 1/2 mark.

(iii) graph

- labeled axis - 1mk

- correct plotting - 1/2 per point max 2 marks

- correct scale - 1mk

- straight line with positive gradient - 1 mark

(iv) correct intervals from the graph - 1 mark

Correct evaluation to 4 s.f - 1 mk

(v) wx = swx (1mk)

U = wy -wx (1mk)

(vi) L =  (1mk)

 (2mks)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| U(cm) | 20.0 | 25.0 | 30.0 | 35.0 | 40.0 | 45.0 | 50.0 |
| V(cm) | 20.0 | 16.0 | 15.0 | 14.0 | 13.3 | 12.9 | 12.5 |
|  |  |  |  |  |  |  |  |

- for values of V - 1 mark for each point, max (5mks)

- for  values, I mark for all correct.

- if any is wrong, penalize fully. (0 mark)

d(i) graph

- correct labelling of axis (1mk)

- correct scale. (1mk)

- correct plotting - 1/2 marks for each, maximum 2

- line - straight line with positive gradient (1mk)

d(ii) - correct intervals - 1 mark

- correct evaluation 4sf - 1mk

- if units are missing, deny 1/2 marks

(iii) - correct value of intercept - 1mk

- correct unit of intercept - 1mk

(iv) almost equal.

e(iii) d= 67.8-67.5= 0.3cm

(iv) correct substitution - 1mk

Correct evaluation to 4sf/exact - 1mk