**NAME: ………………………………………………………ADM NO. ………CLASS………….**

**INDEX NUMBER …………………………………………CANDIDATE’S SIGN………………**

**PHYSICS**

**PAPER 3**

**TIME: 2 ½ HOURS**

 ***JOINT MOCK EXAMINATION***

**Marking scheme**

**QUESTION 1**

Measure the following; (1mks)

 Angle r …**190**…..,

Length d…**1.2**………..cm

Give d= b sin(i-r)/sin (90-r) calculates the value of b.             (2mk)

**d=(b sin 110  )/sine 71**

**=(0.1908/0.9455)b**

1.2  =0.202b     b=1.2/0.202=5.94cm.

(vii)Tabulate your results. (5mks)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **i0** | 30 | 40 | 50 | 60 | 70 |
| **L (cm)** | **6.5** | **6.8** | **7.3** | **7.5** | **8.0** |
| **S (cm)** | **2.0** | **2.7** | **3.4** | **4.0** | **4.8** |
| **S/L** | **0.3077** | **0.3970** | **0.4657** | **0.5333** | **0.6000** |
| **SIN i** | **0.5** | **0.6429** | **0.7660** | **0.8666** | **0.9396** |



Graph

 axis with units         1mk

Appropriate scale   1mk

Plotting                    2mks

Straight line with positive gradient   1mk

**K= slope**

**PART C**

1. G.   G = \_\_\_\_\_\_**50.0**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cm **(1 mark)**

X = \_\_\_\_\_\_**0.15**\_\_\_\_\_\_\_\_\_\_m Y = \_\_\_\_\_\_\_**0.02**\_\_\_\_\_\_\_\_\_\_m **(1 mark)**

.  Volume =………**2cm3**….

Density =**5.9/2**

**=2.95 g/cm3**

**2950 kg/m3**  (2mks)

Question 2

aE= **1.50 +/-  0.10 v**  (1/2 mk)

b) (1/2mk)

I= **0.12 A**

Given that E=IR+Ir where R is 10Ω

 Determine the value of r r= **2.5 Ω** (2mks)

**B**

. R= **0.28mm** R=**0.028cm** (1mk)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Length l (cm) | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| p.d (V) | **0.30** | **0.45** | **0.55** | **0.70** | **0.85** | **1.00** | **1.25** |
| 1/L | **0.0500** | **0.3333** | **0.25** | **0.02** | **0.016** | **0.0142** | **0.0111** |
| 1/v | **3.333** | **2.222** | **1.818** | **1.428** | **1.00** | **0.909** | **0.800** |



axis with units         1mk

Appropriate scale   1mk

Plotting                    2mks

Straight line with positive gradient   1mk

Given that **S=Ar/EP**

On the graph above