**FORM 3 PP3 PHYSICS**

**TERM 3 2023**

**MARKING SCHEME**

1. d1= 0.38mm
2. d2=0.39 mm
3. d3= 0.40 mm (½mk)

Average d=$ \frac{0.38+0.39+0.40}{3}$

=0.39 $\pm 0.02mm$ (½mk)

1. **table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Length(m)** | **V (volt)** | **I(A)** | **R=**$\frac{V}{I}$ |
| 0.20.30.40.50.60.70.8 | 0.300.400.500.600.700.901.00$\pm 0.05$ (2mks) | 0.100.100.100.100.100.100.10$\pm 0.05$ (2mks) | All correctTo four significant or exact (2mks) |

1. - axes labeled with units (1mk)
* Uniform and simple scale (1mk)
* correct plotting within one small square

(4pts x ½mk= 2mks)

* Straight line with a positive gradient passing at least three points. (1mk)
1. - Correct interval within one small square (1mk)
* Correct substitution and evaluation (1mk)
* Answer accuracy with units (1mk)
1. - Slope =$\frac{P}{A}$ area to be in SI unit.
* Correct calculation of cross sectional area of the wire, A=п$ \frac{d}{2} $2 (1mk)
* P= slope x A; correct substitution and evaluation. (1mk)
* Answer accuracy with unit. (1mk)

**Question 2**

**Part 1**

1. Table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Mass (m) (g)** | **40** | **60** | **80** | **100** | **120** | **140** |
| Mass m (kg) | 0.04 | 0.06 | 0.08 | 0.10 | 0.12 | 0.14(2mks) |
| Time for 10 oscillations | 3.85 | 3.90 | 4.50 | 5.22 | 5.60 | 6.03(2mks)$$\pm 0.05s (2mks)$$ |
| Period T(s) | All Correct to 4 s.f or exact |
| T2(s2) | All correct to 4s.f or exact(2mks) |

1. - Axes labeled with units (1mk)
* Uniform and simple scale (1mk)
* Correct plotting within one small square (4pts x ½mk= 2mks)
* Straight line with a positive gradient passing through at least 3 points. (1mk)
1. - Correct interval within one small square. (½mk)
* Correct substitution and evaluation (½mk)
* Answer accuracy with units (1mk)
1. - Form y= mx+c

 Slope = $\frac{4π^{2}}{k}$

* Correct substitution (1mk)
* Correct evaluation (1mk)
* Answer accuracy with units (1mk)

**PART II**

c. Angle B = 180$\pm $10 (1mk)

d. Correct substitution (1mk)

Correct evaluation and answer (1mk)

Correct use of the plain paper (1mk)