FORM 3 PP3 PHYSICS
TERM 3 2023
MARKING SCHEME

a. d_1= 0.38mm
d_2=0.39 mm
d_3= 0.40 mm (½mk)
Average d= $\frac{0.38+0.39+0.40}{3}$
=$0.39 \pm 0.02mm$ (½mk)

d. table

Length(m)	**V (volt)**	**I(A)**	**R=$\frac{V}{I}$**
0.2	0.30	0.10	All correct
0.3	0.40	0.10	To four significant
0.4	0.50	0.10	or exact
0.5	0.60	0.10	
0.6	0.70	0.10	(2mks)
0.7	0.90	0.10	
0.8	1.00	0.10	
	$\pm$0.05	$\pm$0.05	
	(2mks)	(2mks)	

e. - 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)

f. - Correct interval within one small square (1mk)
- Correct substitution and evaluation (1mk)
- Answer accuracy with units (1mk)

g. - Slope =$\frac{P}{A}$ area to be in SI unit.
- Correct calculation of cross sectional area of the wire, A=π$\left[\frac{d}{2}\right]^2$ (1mk)
- P= slope x A; correct substitution and evaluation. (1mk)
- Answer accuracy with unit. (1mk)

Question 2

Part 1

e. 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
Time for 10 oscillations	3.85	3.90	4.50	5.22	5.60	6.03
Period T(s)	All Correct to 4 s.f or exact					
$T^2(s^2)$	All correct to 4s.f or exact					

(2mks)

$\pm 0.05s$ $(2mks)$

(2mks)

(2mks)

f. - 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)

g. - Correct interval within one small square. (½mk)
- Correct substitution and evaluation (½mk)
- Answer accuracy with units (1mk)

h. - Form y= mx+c

Slope = $\frac{4\pi^2}{k}$

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

PART II

c. Angle B = $18^0 \pm 1^0$ (1mk)

d. Correct substitution (1mk)
Correct evaluation and answer (1mk)
Correct use of the plain paper (1mk)