



FORM FOUR PAPER 3

PHYSICS P3

TRIAL 2, 2019

MARKING SCHEME

QUESTION 1

i) a) $2.24\text{cm} \pm 0.1$

H=

b) $14.9\text{cm} \pm 0.1$

ii) $24.7\text{g} \pm 1$

Volume of water in cm^3/ml	Height h (cm) (± 0.1)
10	2.7
20	5.1
35	6.4
45	8.8
50	10.0
65	13.6

Each $\frac{1}{2}$ mk total 3mks

(3mks)

v) Graph paper

vi) Gradient = $\frac{\text{change in } y}{\text{change in } x}$

= $\frac{62-40}{13-78} \sqrt{1}$

= $\frac{22}{5.2} \sqrt{1}$

= 4.231cm² without unit ½mk

vii) L= 86cm ±1.0

viii) H $\frac{2L^2}{2500} - 5$

= 14.9 $\frac{2 \times (86)^2}{2500} - 4.231$

= 14.9 $\frac{14792}{2500} - 4.231$

= 149 5.9168 - 4.231

= 14.9 × 1.6858

= 25.11842√1mk

ix) Density = $\frac{\text{mass}}{\text{volume}} = \frac{24.7}{25.11842}$

= 0.9833g/cm³

QUESTION 2

u(cm)	30	35	40	45	50	55	
v(cm)	15.0	14.0	13.5	12.9	12.5	12.0	1mk each Max 5 points
m = $\frac{v}{u}$	0.5	0.4	0.3375				1mk all correct

6mks

iv) Graph paper :

Axes- well labelled quantity and units

(1mk)

Scale – uniform, simple and accommodative (1mk)

Plotting – exact points or to 1 small square

½mk each max of 4 (2mks)

Line – should pass through majority of points with positive gradient (1mk)

v) Slope = $\frac{\text{change in } y}{\text{change in } x}$

$$= \frac{0.5 - 0.2 \sqrt{1/2}}{15 - 12 \sqrt{1/2}} = \frac{0.3}{3}$$

$$\frac{1}{10}$$

$$0.1 \text{ cm}^{-1}$$

vi) $m = \frac{v}{f} - 1$

$$\frac{1}{f} = \text{gradient} \sqrt{1}$$

$$\frac{1}{f} = 0.1$$

$$f = 10 \text{ cm} \sqrt{1}$$

PART B

i) $E = 1.5V \pm 0.1$ (1mk)

ii) $V = 1.14 \pm 0.1v$ (1mk)

$I = 0.04A \pm 0.1$ (1mk)

iii) $E = V + 1V$

$$1.5 = 1.14 + 0.048 r \sqrt{s1}$$

$$1.5 - 1.14 = 0.048$$

$$0.36 = 0.04r$$

$$R = \frac{0.36}{0.04} = 9$$



