

MARKING SCHEME

FORM 4 TERM 1
232/3
PHYSICS PAPER 3

(a)

Table 1

Length X cm	32	28	24	20	16	12
Time t for 10 oscillations (s)	9.32	8.72	8.00	7.40	6.62	5.75
Period T= (s)	0.932	0.872	0.8	0.74	0.662	0.575
T ² (S ²)	0.87	0.76	0.64	0.55	0.44	0.33

✓✓2

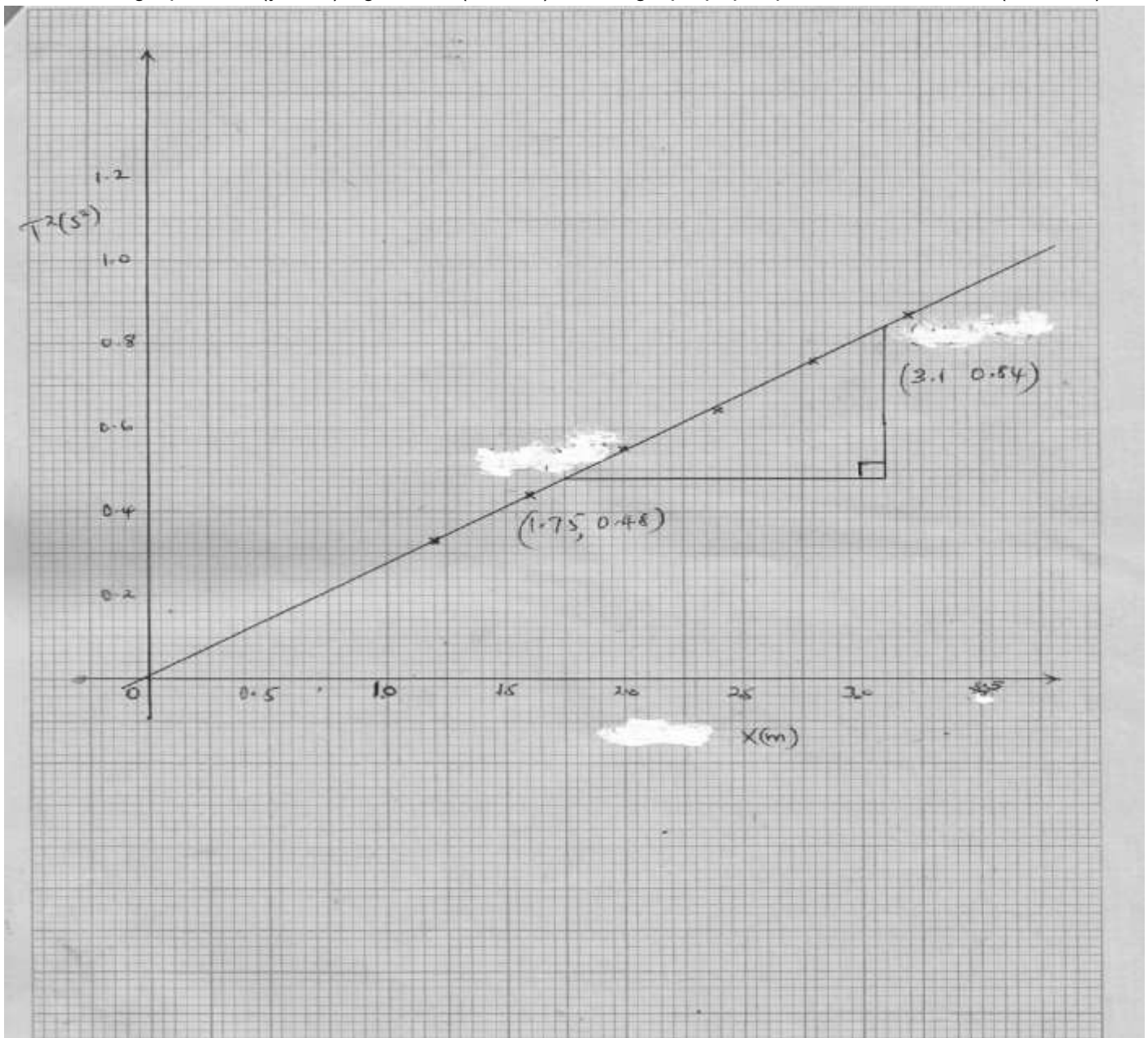
✓✓2

✓1

(a)

ny 4 to 6 correct values, 2 marks, 2 to 4 values, 1 mark, less than 2 values, no mark)

(b) Plot a graph of T^2 (y-axis) against X (metres) on the graph paper provided. (5 marks)



Scale = 1 mark

Axes with units = 1 mark

Plots = 2 marks

Line = 1 mark

(c) i)

slope = ✓

slope = ✓

slope = $2.67s^2/m$ ✓

(3 marks)

ii) Obtain the value of K in the equation S=

(2marks)

$2.67s^2/m =$

=

=

/ ✓

PART B

(d)

(3 marks)

Table 2

$t_1(s)$	$t_2(s)$	$t_3(s)$	Average t(s) $t = \left(\frac{t_1 + t_2 + t_3}{3} \right)$	$T = \frac{t}{5}(s)$
3.68 ✓ 1/2	3.75 ✓ 1/2	3.81 ✓ 1/2	✓ 1/2	✓ 1

(e)

2 m

$P =$ ✓

$P = 8.547m/s^2$ ✓

QUESTION TWO

$h = 6.3cm$ ✓

(1 Marks)



R= cm ✓

(1 Marks)

(i)

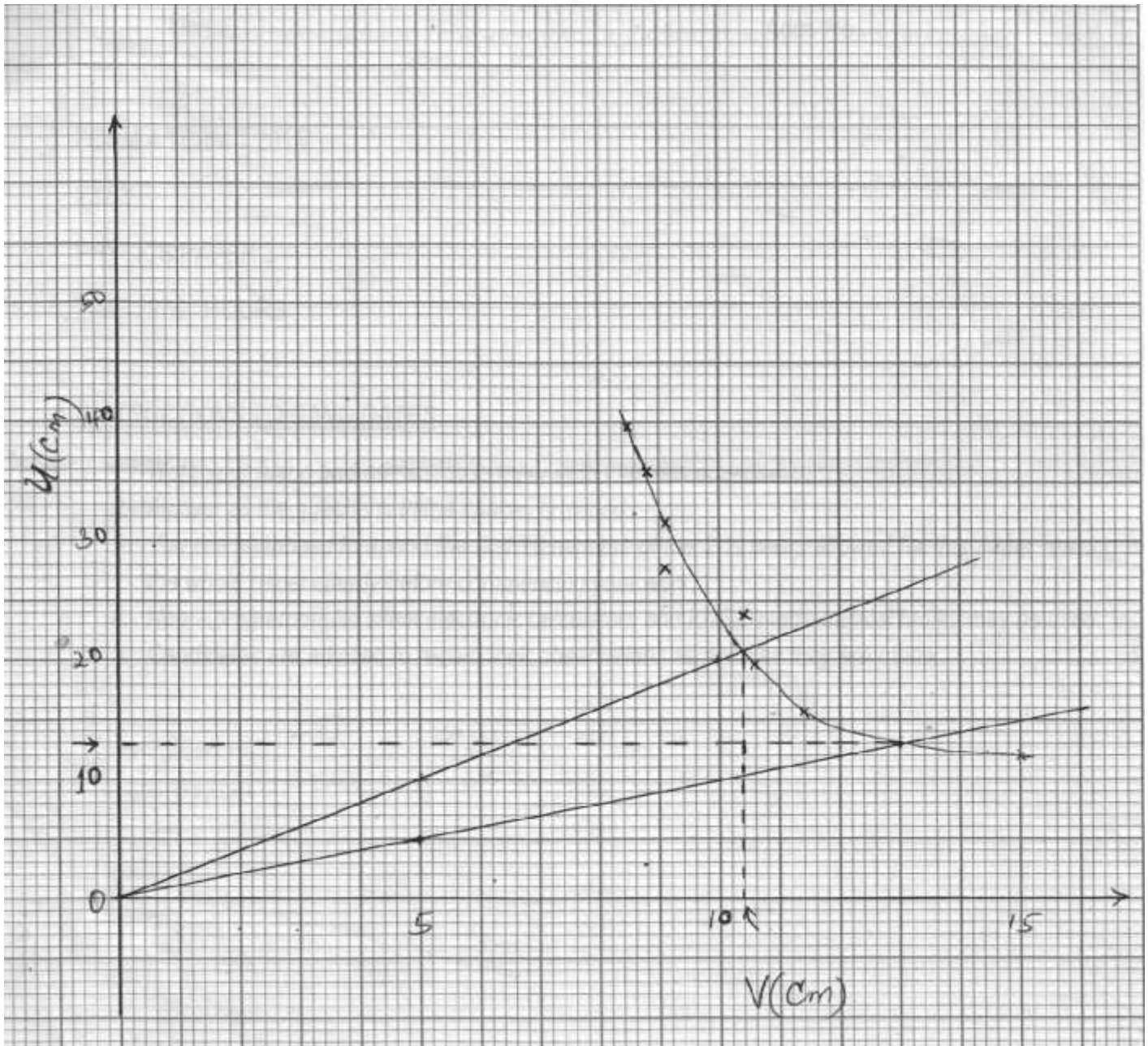
(8 marks)

	10R	9R	8R	7R	6R	5R	4R	3R
U (cm)	39.8	35.9	31.9	27.9	23.9	19.9	15.9	12.0
V (cm)	8.5	8.8	9.1	9.1	10.4	10.6	11.4	15.0

NB: Any other appropriate value of u and v depending on the value of R obtained can be awarded.

-each correct value = 1/2 mark

(5 marks)



Scale = 1 mark

Axes with units = 1 mark

Plots = 2 marks

Smooth Curve = 1 mark

i) From the graph determine

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'V' the value of V for which $v=u$

(1 Mark)

'V'=13cm✓

a) 'U' the value of U for which $u=2v$

(1 Mark)

'U' = 10.4cm✓

ii) **Determine** the effective focal length of the 'lens' from the formulae $f=$

(2 Marks)

✓

=

✓

iii) Hence determine the value of

(1 Mark)

✓