**MWAKICAN JOINT EXAMINATION (MJET)**

**MARKING SCHEME**

FORM 4 TERM 1 2015

232/3

PHYSICS PAPER 3



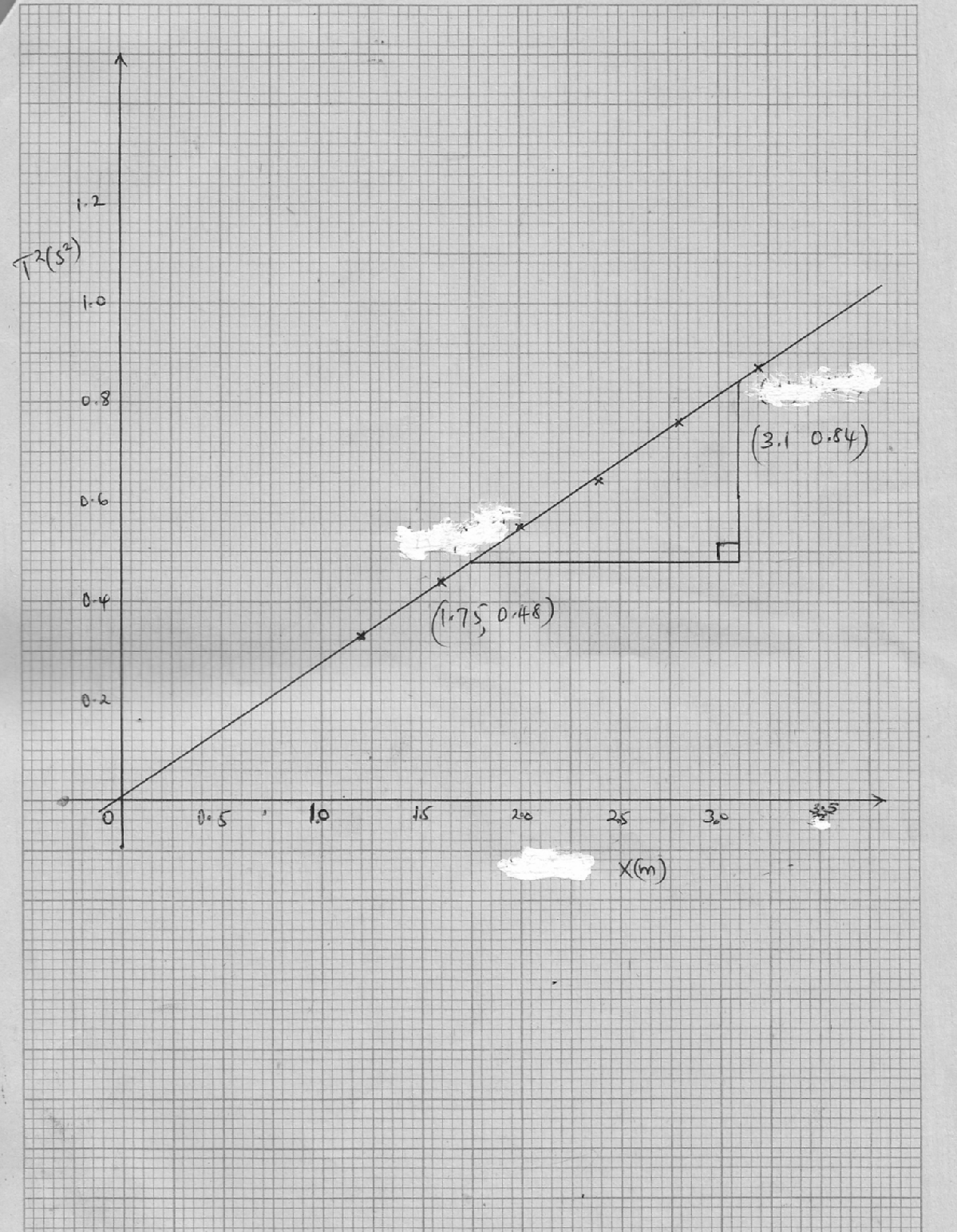
**Table 1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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** |
| T2 (S2) | **0.87** | **0.76** | **0.64** | **0.55** | **0.44** | **0.33** |

🗸🗸2

🗸🗸2

🗸1  
 *(any 4 to 6 correct values, 2 marks, 2 to 4 values, 1 mark, less than 2 values, no mark)*

1. Plot a graph of T2 (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*

1. i)

**slope=** 🗸

**slope =** 🗸

**slope = 2.67s2/m**🗸(3 marks)

ii) Obtain the value of K in the equation S= (2marks)

**2.67s2/m=**

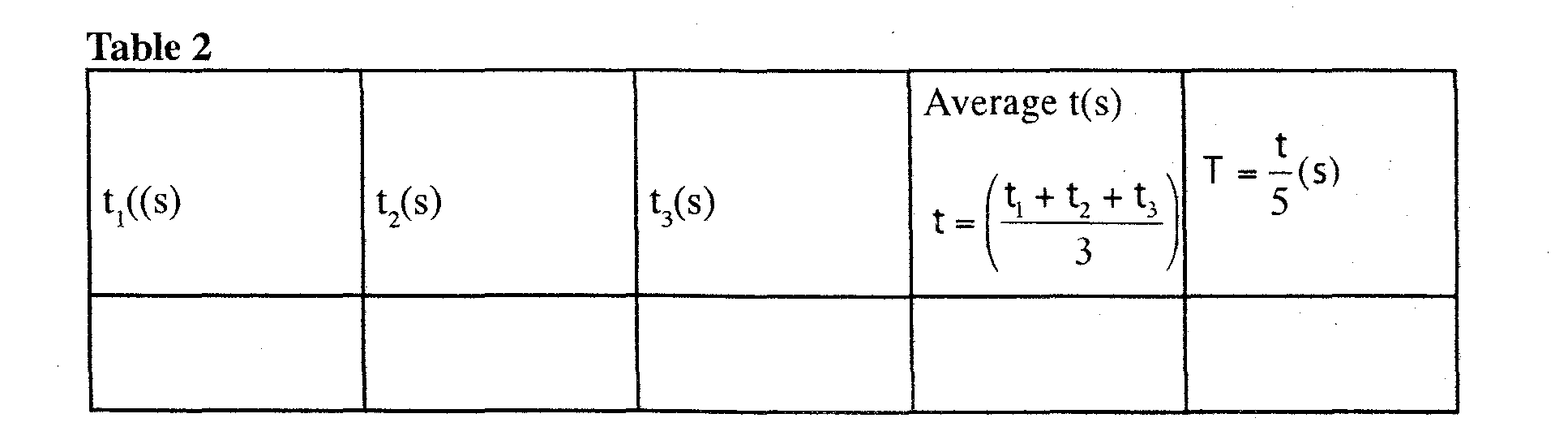
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**=**

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**PART B**

1. (3 marks)



🗸 1

🗸 ½

**3.81** 🗸 ½

**3.75** 🗸 ½

**3.68** 🗸 ½

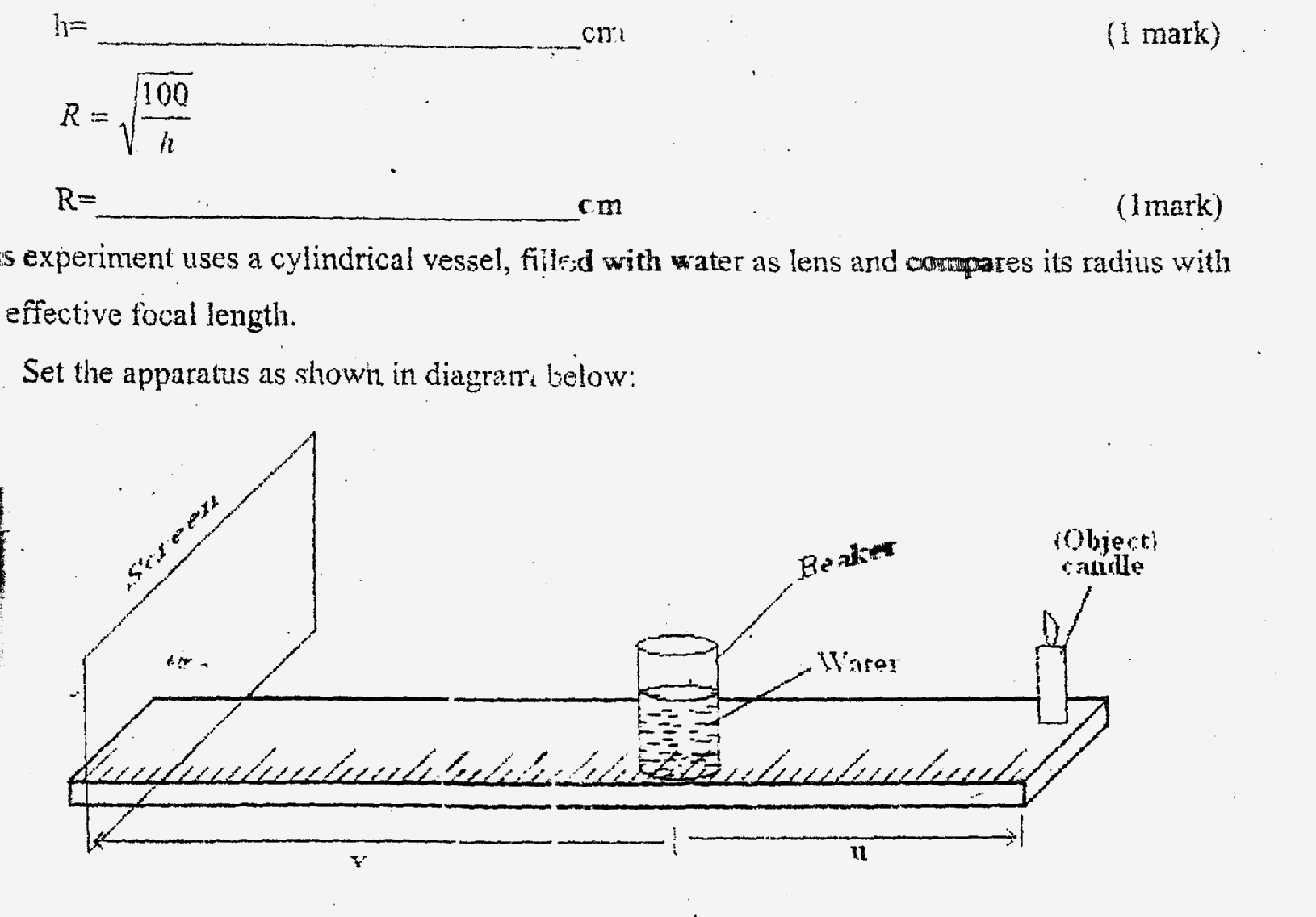
1. (2 marks)

*P=* 🗸

***P=8.547m/s2*** 🗸

**QUESTION TWO**

h= **6.3**cm 🗸 (1 Marks)



R= cm 🗸 (1 Marks)

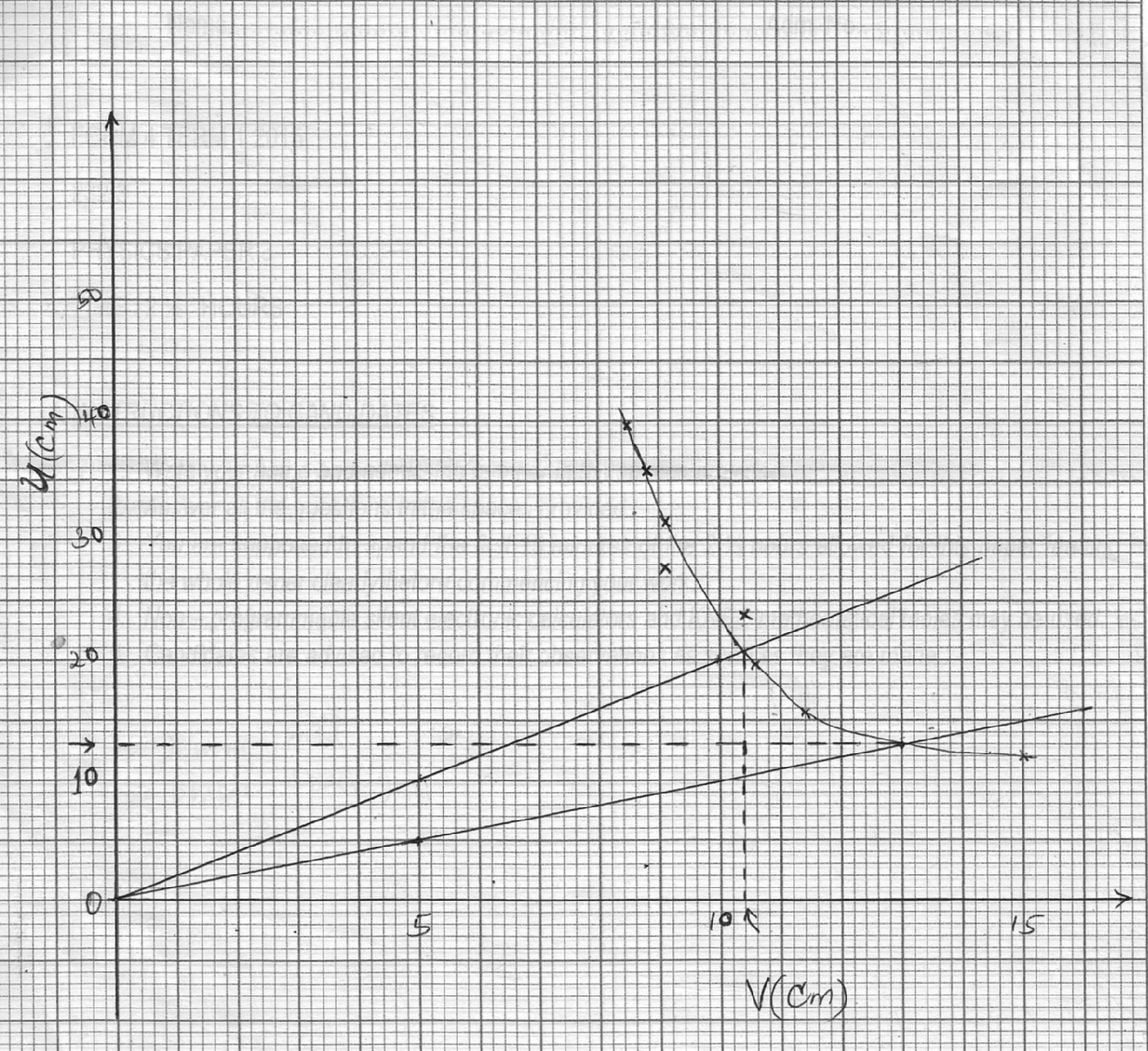
(i) (8 marks)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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 = ½ mark***

(5 marks)



*Scale =1 mark*

*Axes with units=1 mark*

*Plots = 2 marks*

*Smooth Curve = 1 mark*

1. From the graph determine

‘V’ the value of V for which v=u (1 Mark)

***‘V’=13cm***🗸

1. ‘U’ the value of U for which u=2v (1 Mark)

***‘U’ = 10.4cm***🗸

1. **Determine** the effective focal length of the ‘lens’ from the formulae f= (2 Marks)

🗸

**=**

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1. Hence determine the value of (1 Mark)

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