***Kenya Certificate of Secondary Education (K.C.S.E.)***

**Physics**

Paper 3

**FORM 4 Marking scheme**

1. **iii)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Length from A to B (cm) | 80 | 76 | 72 | 68 | 64 | 60 |
| Time for 10 oscillations(s) | 10 | 11 | 12 | 13 | 14 | 15 |
| Period time T (s) | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 |
| T2(S2) | 1.00 | 1.21 | 1.44 | 1.69 | 1.96 | 2.25 |
| 2θ | 1500 | 1380 | 1300 | 1080 | 1040 | 960 |
| θ | 750 | 690 | 650 | 540 | 520 | 480 |
| Cos θ | 0.2588 | 0.3883 | 0.4226 | 0.5878 | 0.6157 | 0.6691 |

**f)**

 **g)**

 **h)**

**2. a) ii) V=2.7volts**

 **vi)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Length l(cm) | 10 | 20 | 30 | 50 | 80 |
| Current | 0.86 | 0.48 | 0.43 | 0.255 | 0.205 |
| p.d V(v) | 2.1 | 2.3 | 2.4 | 2.5 | 2.6 |
| Y-V | 0.6 | 0.4 | 0.3 | 0.2 | 0.1 |
|  | 3.5 | 5.75 | 8.0 | 12.5 | 26 |
|  | 2.442 | 4.792 | 5.581 | 9.804 | 12.683 |

**vii) a)**

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5

10

15

20

25

30

-2

4

6

8

10

12

14

**b)**

**c) d=2.6Ω intercept on R axis✓1**

**Part B**

|  |  |  |
| --- | --- | --- |
| **L1cm** | **L2** |  |
| **30** | **50.0±2** | **0.60** |
| **60** | **27.5±2** | **2.18** |