1. **Experimental Data**

Length of spring, L = cm

Original mass of the spring = g

**Table:** Determinations of extensions and time periods

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No. of obs.** | **Loads**  𝒎𝟎  **(gm)** | **Extension**  𝒍  **(cm)** | **No.of vibration**  𝒏 | **Total time**  𝒕  **(s)** | **Time period**  𝑻 = 𝒕/𝒏  **(s)** | 𝑻𝟐  𝒔𝟐 |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |

1. **Analysis and Calculation**

We know,

k=

But is the slope from the first graph,

Now, For the first graph we have, slope=

=

=

The original mass of spring, m= gm

So, the original effective mass= gm

= gm

Again, From graph effective mass, m’= gm

= gm

= gm

Percentage (%) of error

=%

1. **Result**

The spring constant, k = *dyne/cm*

Experimental effective mass*,* 𝑚′ *=*  gm

Percentage (%) of error =