PROCEDURE:

For the verification of law of length:

1. Place the whole arrangement of sonometer on a table. Take a set of tuning forks having different frequencies.
2. Suspend a certain mass ($0.05\ Kg\ OR\ 0.5Kg$) to provide tension to the wire.
3. Place two bridges near the mid-point of the stretched wire.
4. Strike a tuning fork against a rubber pad and put the steam of the vibrating tuning fork on the upper surface of the sonometer (in between the bridges). Change the position of bridges (start from least separation) until the wire between the bridges vibrate with maximum amplitude. Note down the length (separation) between the bridges (called as resonating length) [See observation table below].
   [The resonance can be identified by the maximum vibration of the paper rider placed over the string.]
5. Repeat the step 3 for next two tuning forks keeping the suspended mass fixed.
6. Draw a graph of $\boldsymbol{f\ vs\frac{1}{l}}$. The graph will be a straight line passing through origin, which verifies the law of length ($\boldsymbol{fl = constant}$).

For the verification of law of tension:

7. Suspend a fixed mass of $0.05\ Kg$ OR $0.5Kg$ to provide tension to the wire.
8. Place two bridges near the mid-point of the stretched wire.
9. Strike a tuning fork against a rubber pad and put the steam of the vibrating tuning fork on the upper surface of the sonometer (in between the bridges). Change the position of bridges (start from least separation) until the wire between the bridges vibrate with maximum amplitude. Note down the length (separation) between the bridges (called as resonating length) [See observation table below].
10. Repeat the step 9 by changing the suspended mass (add by 0.05 Kg each time) and keeping the tuning fork fixed.
11. Draw a graph of $\boldsymbol{T\ vs\ l^2}$. The graph will be a straight line passing through origin, which verifies the law of tension $\left(\boldsymbol{\frac{T}{l^2} = constant}\right)$

OBSERVATIONS:

Least count of meter scale = ……

Observation table:

- **For the verification of law of length:**

S.N.	Tension on the String $T = Mg\ (N)$	Frequency of tuning fork $f\ (Hz)$	Resonating length $l\ (m)$	Reciprocal of resonating length $\frac{1}{l}\ (m^{-1})$	$f \times l$ (a constant)	Remarks
1.						
2.						
3.						