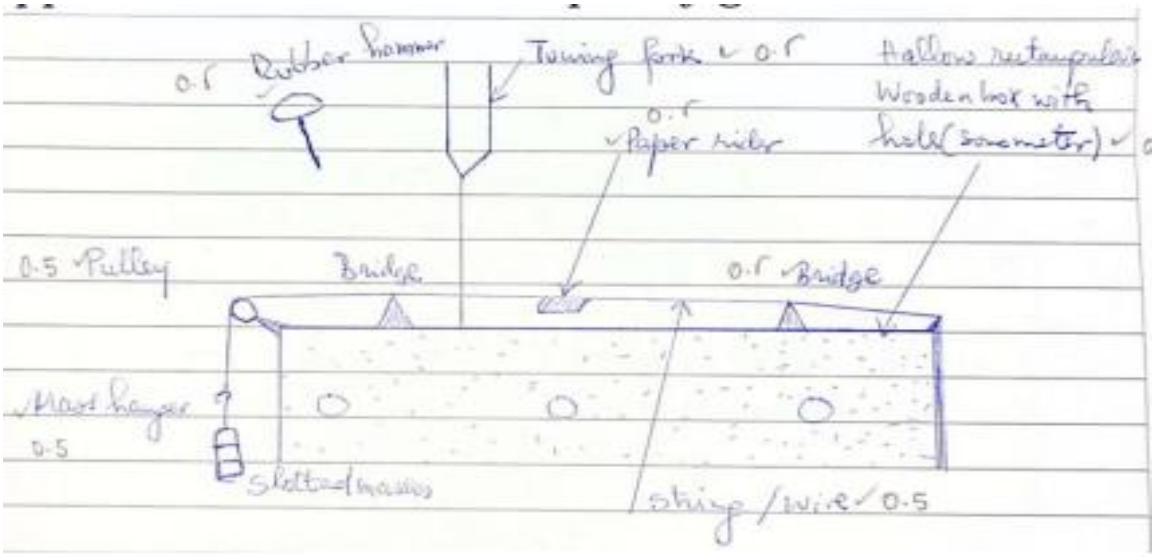
S6 MARKING SCHEME OF ALTERNATIVE TO PHYSICS PRACTICAL EXAM 2023-2024(20 MARKS)

a) A sonometer is defined as. The device that is used for demonstrating the relationship between the frequency of the sound that is produced by the string when it is plucked and the tension, length, and mass per unit length of the string./**2marks**

b)



c)

i) Procedure

- Place a light paper on the wire midway between knife edges. **(1 mark)**
- Take a tuning fork of highest frequency, strike it on the rubber pad and set into vibration.
- Put the stem of vibrating tuning fork gently on the sonometer box.
- Slowly, change the distance between two knife edges and adjust particular distance between them so that the paper rider falls off.
- Measure the distance between knife edges. Take one or more reading with the same tuning fork and find mean vibrating length.
- Repeat procedure with different tuning fork with decreasing order of frequency.
  Note the corresponding length of vibrating wire.
- Measure and record "L" for each tuning fork.
- Plot a graph of f ($y-axis$) against $\frac{1}{L}$ ($x-axis$)

ii) length of vibrating wire between the bridge. **/1mark**

iii) -Tension of the wire **/1mark**

- Linear mass density**/1mark**

iv) – Table **/1mark**

--Graph **/1mark**

--calculation**/1mark**

v)

Precautions

- The wire should be soft iron or any other magnetic material. **(1 mark)**
- The wire should be uniform cross – section and kinkless.
- Length should be noted when amplitude of vibration is maximum.
- While transferring the vibration, the lower end of the handle should be touched gently to the sonometer board.
- Frictionless pulley should be used.

- Soft rubber pad should be used to strike the tuning fork.
- The maximum load on the wire should not exceed the elastic limit.
- The bridge must be of equal height.
- The bridge edge must be smooth.

d) i) The product (ν l) is constant, when T and m are constant. **/1mark**

ii) The ratio (T/l^2) is constant, when ν and m are constant **/1mark**

iii) The product (ml^2) is constant, when ν and T are constant. **/1mark**