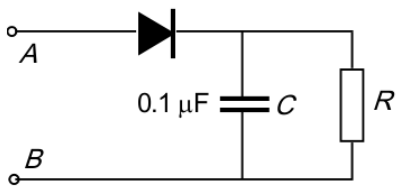
**Problem 1**

You have at your disposal the following material:

(1) A sine wave voltage generator set to a frequency of 0,20 kHz.
(2) A dual ray oscilloscope.
(3) Millimeter graph paper.
(4) A diod.
(5) A capacitor of 0.10 µF (square and black).
(6) An unknown resistor $R$ (red).
(7) A coupling plate.
(8) Coupling wires.

Build the circuit shown in the figure.




Connect the terminals $A$ and $B$ to the sine wave generator set to a frequency of 0.20 kHz. Determine experimentally the mean power developed in the resistor $R$ when the amplitude of the generator voltage is 2.0 V (that is the peak-to-peak voltage is 4.0 V).