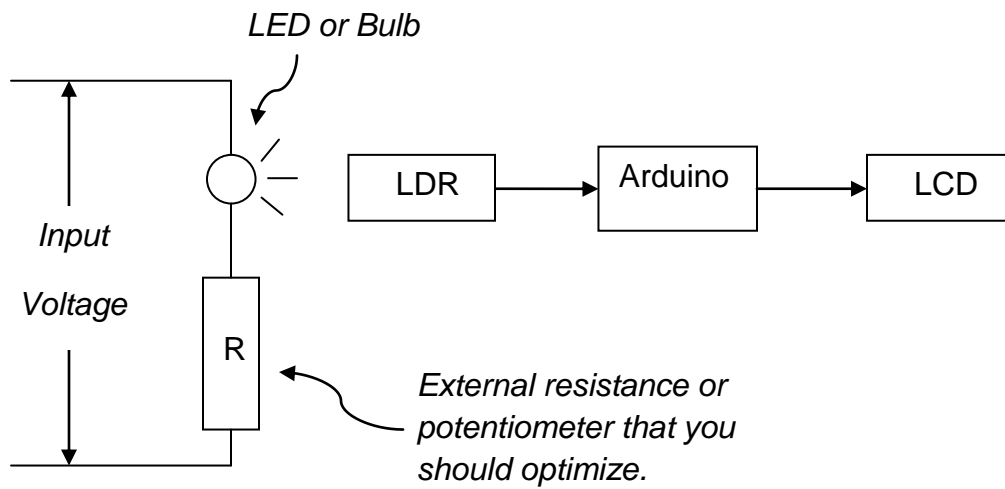


EP486 Microcontroller Applications
First Midterm Exam Questions
Gaziantep University, Department of Engineering of Physics

Select one of the following 3 questions

Question 1

By using Arduino board, design and construct a Multimeter (Ohmmeter + Ampermeter + Voltmeter). Calibrate your device such that, it works fine for the range $[0, 300\text{k}\Omega]$, $[0, 1\text{ A}]$ and $[0, 25\text{ V}]$. A schematic which may help you for designing the voltmeter is shown below.

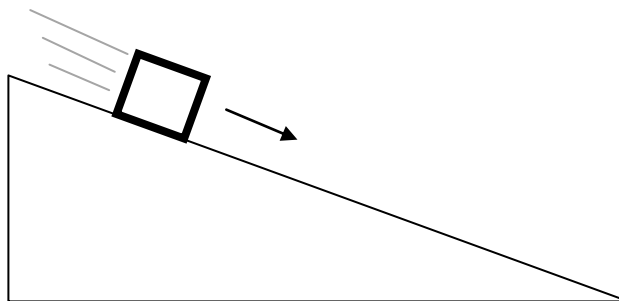


Question 2

By using Arduino board, design and construct a mechanics to measure

- the acceleration in m/s^2 and
- the coefficients of static friction and kinetic friction

of a block sliding down on an inclined plane. The result has to be shown in the LCD screen.



Question 3

By using Arduino board, design and construct a system to measure the thermal conductivity of a material (such as Aluminum block). The result has to be shown in the LCD screen.