



Physics

PHY6T/Q10/task

Unit 6 Investigative and Practical Skills in A2 Physics ISA (Q) Absorption and Attenuation of Radiation

Task Sheet

This task is worth 8 marks

You are advised to read through these instructions before beginning your work.

You are going to investigate how much light passes through a number of layers of tracing paper using a bright light source and an LDR circuit.

- *Set up a suitable circuit using the apparatus provided to determine the resistance of the LDR. Draw a diagram of your circuit showing your power supply, switch and meters.*
- *Position the lamp at the distance given by your supervisor so that it fully illuminates the LDR. Switch it on and determine the resistance R_0 of the LDR. **Do not change the distance between the lamp and the LDR in the remainder of the experiment.***
- *Place a small piece of tracing paper over the LDR so that only light that passes through the paper reaches its light sensitive surface. Take readings to determine the new resistance of the LDR. Repeat the LDR resistance determination for a range of values of n , where n is the number of layers of tracing paper between the LDR and the lamp.*
- *Present all of your measurements in a table.*
- *For each value of n calculate $R = R_n - R_0$, where R_n is the LDR resistance with n layers of paper.*
- *Use your results to plot a graph of R against n . Draw a best fit smooth curve through your points.*

After the Investigation

At the end of the investigation, hand in all your written work, including the graph, to the supervisor.

This documentation will be required for Stage 2 of the ISA. Ensure that you have entered your centre details, candidate number and name on all the sheets you have completed.