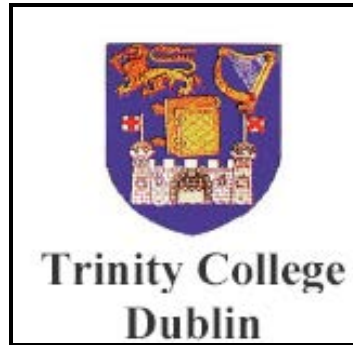


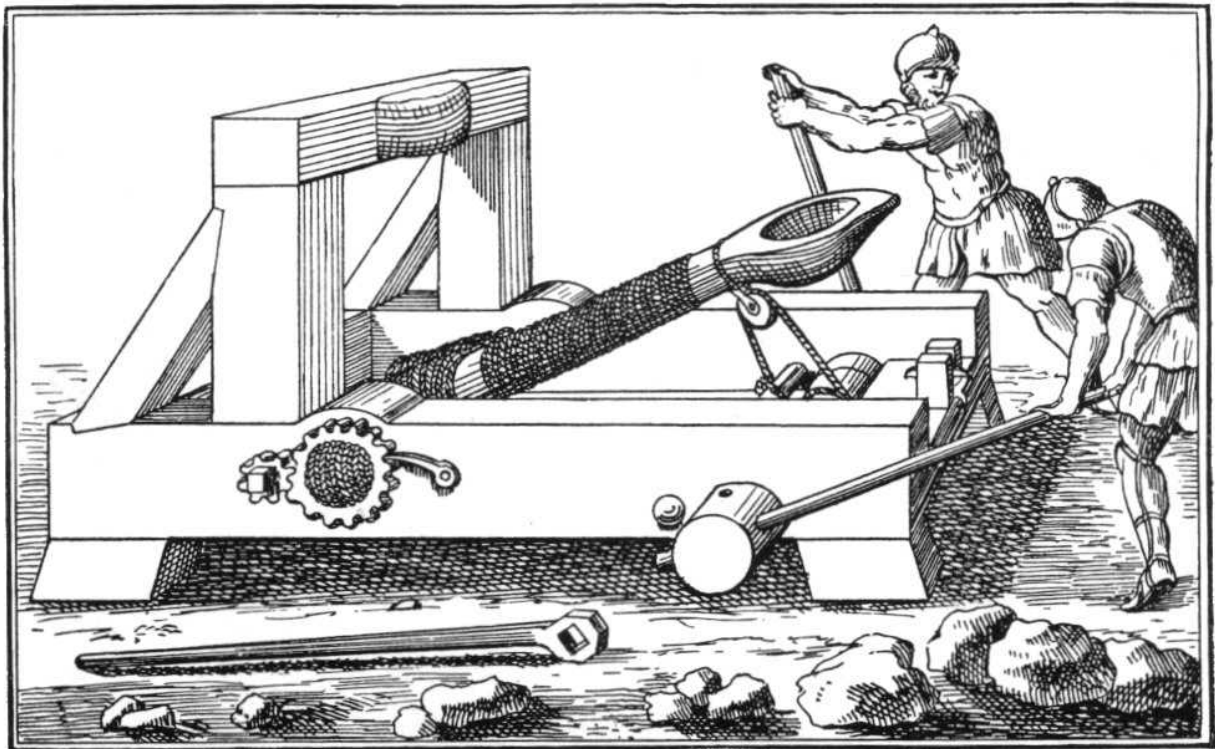


Mangonel



School of Engineering

1E10 ASSIGNMENT.
A5. ELECTRONICS HARDWARE ASSIGNMENT





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1E10 ASSIGNMENT.

A5. ELECTRONICS HARDWARE ASSIGNMENT

Complete the following tasks and submit using WebCT.

1. Explain succinctly, in **fewer than 50 words per stage**, each of the five stages involved in measuring the swing time of the Mangonel arm. You will receive marks for correct description of any parts of any stage. Illustration 1, figures 1 & 2 show the stages involved. [20]

No marks will be awarded for unnecessary, incomplete or incorrect statements.

2. **List** the connections which must be made in stages 2, 3 and 4. Note these are the connections you made in the first and second hardware lab.

Starting with the AND IC, moving to the JK Flip-flop IC and finally the Arduino itself, indicate each pin connection on a separate line.

For example: (**Note, not actual connections**)

Signal 1 connected to Pin 1 of the AND IC

PIN 7 of the AND IC connected to PIN 8 of the JK IC

PIN 8 of the JK IC connected to PIN 5 of the Arduino

Note the power connections that have been provided do not need to be included. Any pin which needs to be connected has been coloured. Remember always to include the names of both ICs. The IC Pin outs are shown in Illustration 2, Figure 1. [25]

Mark the assignment out of 100: i.e. (mark/45)*100



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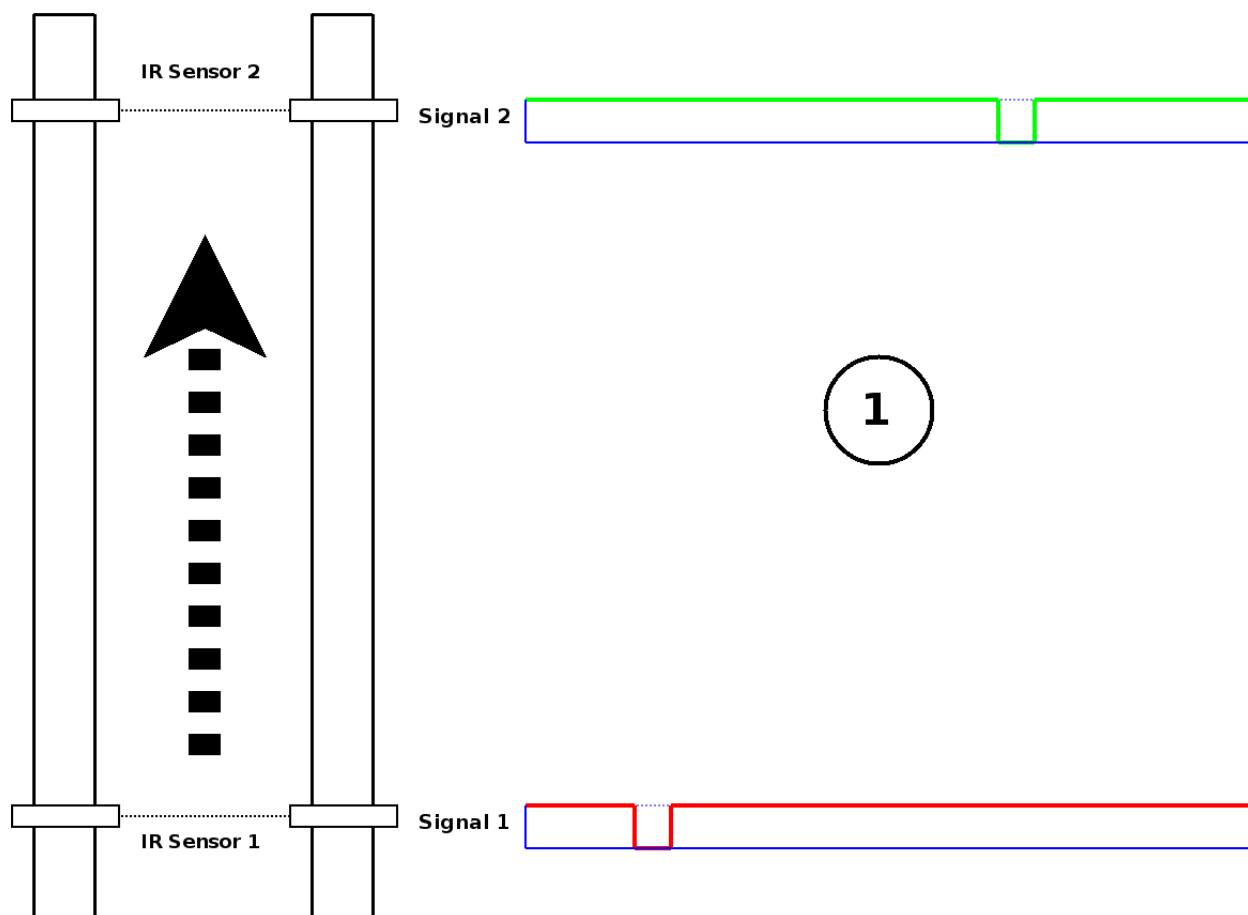


Illustration 1: Figure 1



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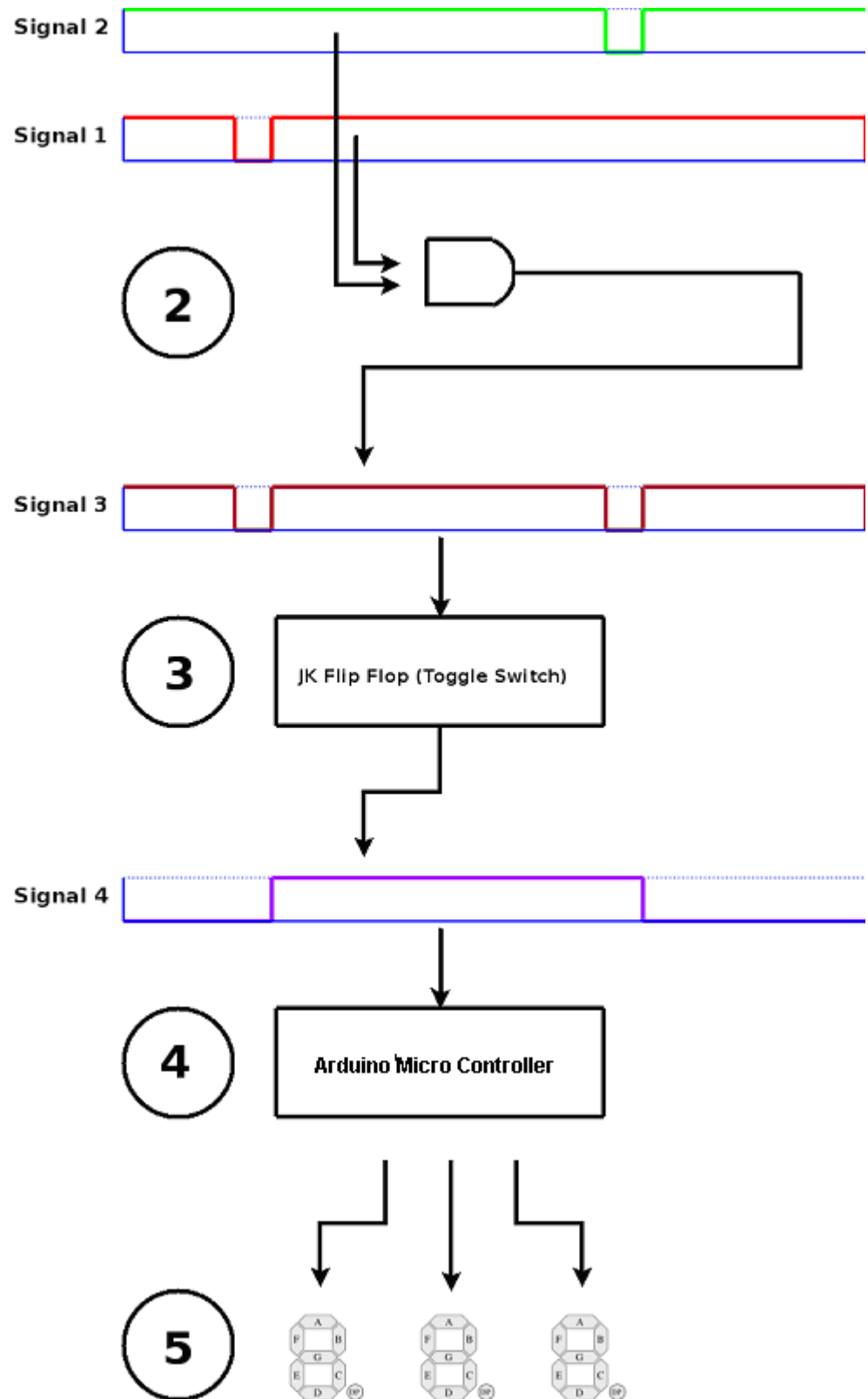


Illustration 1: Figure 2



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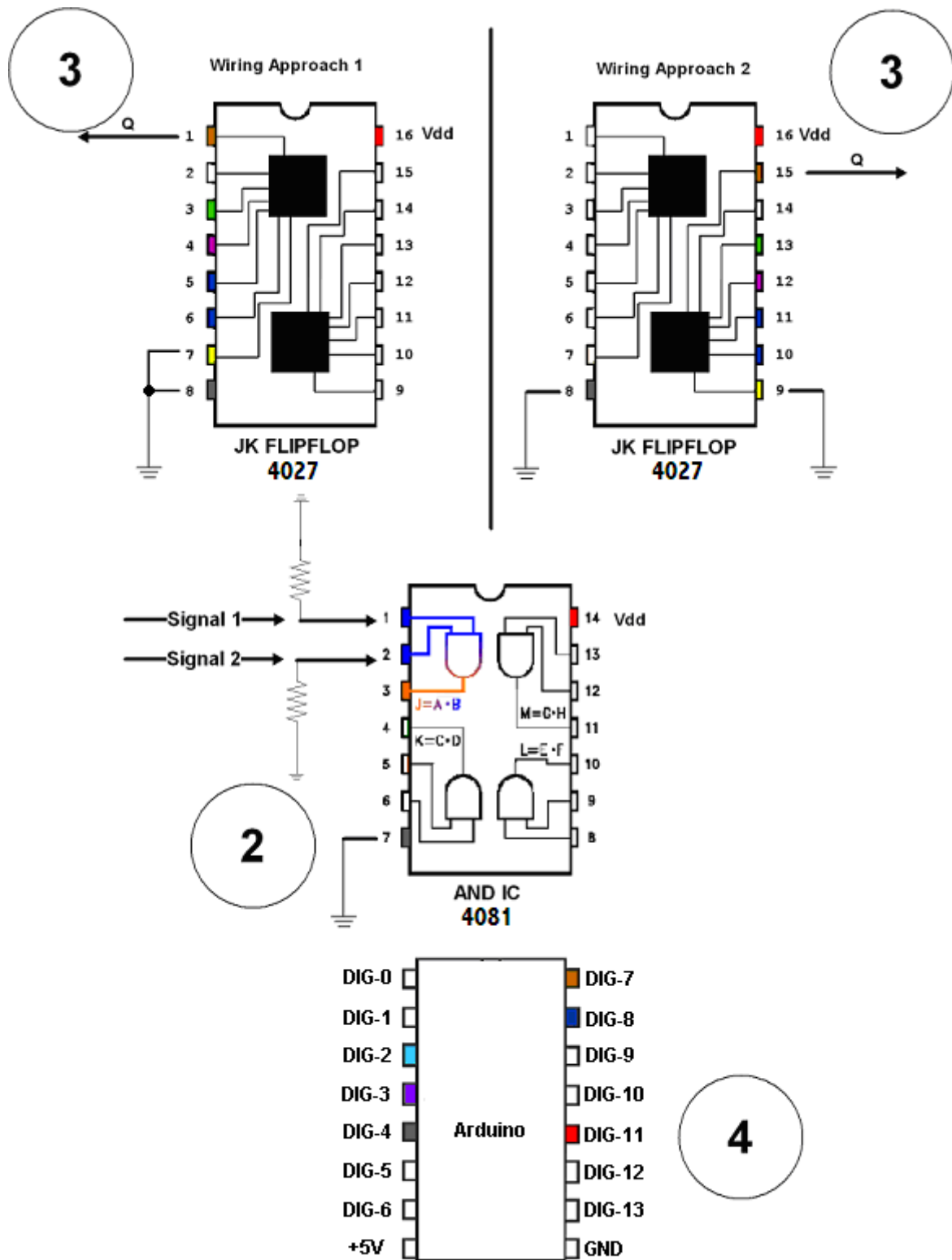


Illustration 2: Figure 1



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Notes:

1. Ensure you save your work in a format that is standard and can be opened. If your documents cannot be opened they will receive no marks.
2. Submit your documents on time. No extensions will be granted.
3. Submit your documents by uploading to WebCT **only**. **Do not** attach to email and forward to me.
4. Ensure you can logon and that all such issues are resolved in good time before the deadline. Passwords expire. Do not leave this assignment until the last minute to find you have some IT issue.
5. Cheating will result in zero marks for the assignment and possibly for the year.

Despite this list, try and enjoy the assignment and try to think around the subject as much as possible and take from it any tips that you might use with your own Mangonel.