Physics Practical Report Checklist

## General

* Include a header and footer with your name and the date.
* Start sections with clear headings.
* Use formal, impersonal language (except in Manipulation and Collaboration).

## Aim

* Be as specific as possible to this investigation.

## Hypothesis

* A statement of what you expect to happen, written as if it will be true.
* Include a specific mathematical relationship.

## Equipment

* Dot point list.
* Check procedure to make sure all equipment mentioned there is listed here.
* Don’t include things that aren’t part of the experiment (e.g. pen to record results).

## Procedure

* Numbered steps, worded as instructions.
* Anyone should be able to exactly repeat your experiment by following this method.
* Include safety precautions.
* Say “Repeat steps …” instead of rewriting instructions.
* Clearly labelled scientific diagram.

## Manipulation and Collaboration

* Things which made it difficult to take accurate or precise measurements.
* Any initiative you showed (extra things you did that weren’t in the procedure).
* Care (preventing damage to equipment) and safety (preventing injury).
* How you cooperated (worked with others and/or as a group).

## Results: Table

* Variables in columns, with independent on left and dependent on right.
* Units in brackets, in column headings only.
* Correct decimal places for measurements and significant figures for calculations.

## Results: Graph

* Fill the whole page.
* Title (descriptive of this experiment).
* Axis labels (including units).
* Independent variable on horizontal (*x*) and dependent on vertical (*y*).
* Sensible major and minor axis scales (neat, consistent values).
* Extend line of best fit to touch an axis. It does not have to go through (0,0).

## Calculations: Hypothesis

* Include derivation and/or research for the hypothesis.
* If the calculations are typed instead of hand-written, use properly formatted equations.
* Discussion of the variables and things to be held constant (see equation for ideas).

## Calculations: Slope

* Choose points at the start and end of the line of best fit (not data points).
* Show working on the graph (dashed lines).
* Include units for the slope (*y* units per *x* units).
* If possible, use the hypothesis equation to calculate an expected slope.
* If expected slope was calculated, also calculate percentage error.

## Discussion

* Discuss both precision and accuracy, including evidence for each.
* Clearly distinguish between precision and accuracy.
* Possible source(s) of random error.
* Possible source(s) of systematic error.
* Predict effects of each error source and compare with experimental results.
* Suggest and explain improvements to the procedure.
* Be realistic and specific in your improvements.

## Conclusion

* Restate the hypothesis and whether it is supported or not by the results.
* Describe evidence/pattern in the results.
* Include important points from Discussion.
* Someone could read the aim and then skip here and get a good idea of what happened.

## References (if relevant)

* Follow the reference formatting guidelines (author year, title, publishing info).