A level – Quantitative (OCR)

All OCR, AS & A2, Quantitative papers take the same form. (All of this information is given to you in the Practical Skills Handbook)

1. You will get 2 marks for setting the equipment up correctly and taking one simple reading

2. You will get 2 marks for a very simple calculation and for recording at least 6 readings/observations. If repeats are appropriate than it is expected that at least one measurement will be repeated 3 times.

3. There is a further mark for using a 'full range' of values (think carefully about this)

4. There are two more marks for recording headings with the correct quantities and units. Beware reciprocals (they do have units i.e. x / m, $^1/_x$ / m^{-1}). Though lg, ln, sin, cos etc can be expressed with units (i.e. sin x, sin (x / m) you will **not** be expected to put in units for these quantities. A distinguishing mark between the quantity and unit is essential it is not enough to put the unit on a new line

5. Precision of reading (distances usually to nearest mm) and consistent use of decimal places (i.e. 0.98 and 1.02) in tables usually attract two marks. Sometimes, where appropriate (usually in a calculated value), there may be a mark for a basic calculation (i.e. $^1/_x$) and/or consistent use of significant figures – unlikely but keep an eye out for this. **If in doubt stick with 3 sig fig**

6. One mark for determination of gradient – show your working clearly on graph and on the paper (change in y / change in x) don't just write down a figure. A triangle must be used whose hypotenuse covers at least half the line drawn.

7. Two marks for correct labels on axes and a graph whose points occupy more than half the graph paper in each direction.

8. Two marks for correctly plotted points and a line of best fit – check carefully and use your own knowledge (for example if terminal velocity is involved) to decide whether the trend is a straight line or a curve.

9. Usually 1 mark for determining the intercept from the line drawn above or for recognising / recording what the gradient represents (y/x) (with correct units). This might be read from a graph or determined using y = mx+c

10. One mark for knowing what the gradient represents and for **clearly** using this value in a calculation. Usually a mark for the result of this calculation which relies of the use of y = mx + c.

11. One mark for using the correct number of significant figures in the quantity calculated and another for the correct units.

12. Finally you will need to justify the significant figures used in your answers and this justification <u>must</u> relate to the sig figs used in readings.

Please think before you write anything, lay everything out carefully and don't miss steps out. Where possible try not to write 'bald' answers (answers without calculations)