A LEVEL *BIOLOGY A & B*

OCR
Oxford Cambridge and RSA
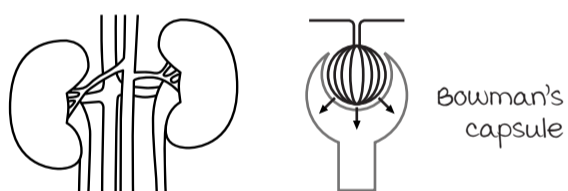
Biology A Level 2018 examiner comment summary

Remember that DNA consists of a sequence of bases, not a sequence of amino acids.

Allele frequency is the fraction of all chromosomes within a population that carry that allele.

The term 'allele frequency' does not mean the same thing as a change in the number of alleles in a population.

The idea that antibiotic resistance is an example of genetic drift was a common misconception.

For   Against

When discussing whether evidence supports a claim, ensure both sides of an argument are considered.

genes ≠ alleles   genetic diversity ≠ biodiversity

resistance ≠ immunity   species ≠ variety

A number of terms relating to genetics were confused with each other. Make sure you're clear on their meanings.

ATP

Kreb's cycle: 1 per cycle
2 per glucose molecule

Many were unclear how many ATP were generated in the Krebs cycle, and where in the cycle it would be made.

Vasoconstriction prevents heat loss ✗

Vasoconstriction reduces heat loss ✓

Vasoconstriction does not happen in the capillaries and doesn't prevent heat loss – it only reduces it.

An action potential signals to the brain ✗

An action potential is transmitted to the brain ✓

Avoids terms like 'signals' and 'messages' to refer to action potentials. Instead, use 'transmitted' or 'propogated'.

There was confusion between anode and cathode in DNA electrophoresis, as well as which way the DNA moved.

Bowman's capsule

In the kidneys, ultrafiltration occurs at the Bowman's capsule and nowhere else in the kidney tubule.

The same amount of water should be used ✗

The same volume of water should be used ✓

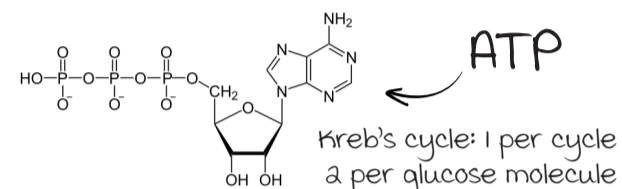The term 'amount' is vague. Where possible, more precise terms should be used instead.

What might have caused the inccuracy in this result?

They might have misread the reading. ✗

Answers to practical questions that cite avoidable human error are unlikely to gain marks.

Animal A has smaller legs than animal B ✗

Animal A has shorter legs than animal B ✓

When describing differences, make sure that the language used is precise and that answers are comparative.

The data in the table shows that...

In questions which ask you to 'evaluate', make sure that you quote relevant data to support your answer.
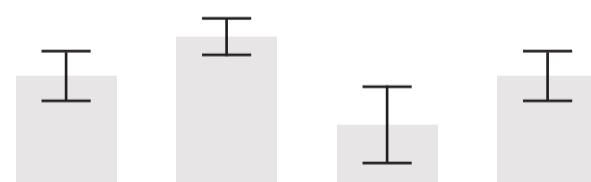
The idea that standard deviations overlapping a difference in means indicates a lack of significance isn't technically correct.

Time (mins)	Volume (cm³)		
	Test 1	Test 2	Test 3
1	50.2	30.4	46.7
2	70.6	40.7	67.3

Anomalous results should only be excluded if there is a clear explanation for why they occured.

Answer: ....10^8 ✗

Answer: ....1×10^8 ✓

When giving answers in standard form, they should be given in the conventional format.

This shows the results are reliable ✗

This shows the results are repeatable ✓

This shows the results are reproducible ✓

Use of the term 'reliability' is not encouraged. 'Repeatability', 'confidence' and 'reproducibility' are more appropriate.

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0.34564524 ✅
0.346 ❌

It's always more accurate to round once, for the final answer, and work with unrounded values on the calculator.
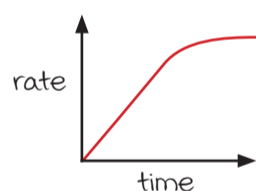
CON

Longer answers don't always lead to more marks. If correct responses are contradicted, marks can be lost.
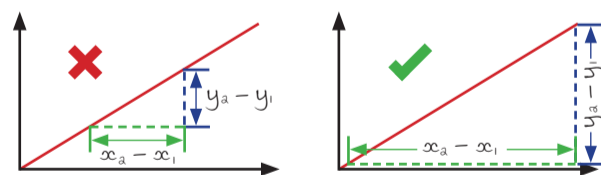
mass = 125 g
time = 25 ms
2 s.f.

The 'appropriate number of significant figures' is the lowest number of significant figures provided in the data.

When explaining the shape of graphs, be clear which part of the graph you are referring to.

Triangles for gradient calculation should be as large as possible – too small a triangle gives a larger error in the value.
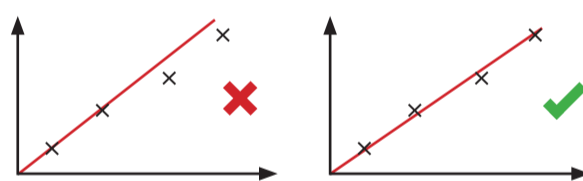

Your answer: ~~A~~ B

If changing the answer for an MCQ, completely cross out the wrong letter and write the correct one anew.

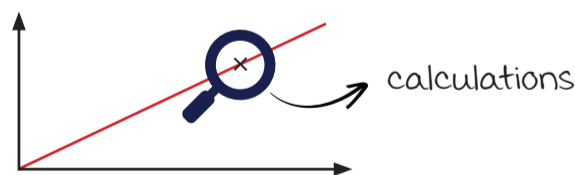* See additional answer page

If use of additional answer pages are necessary, it's a good idea to write a note to the marker to this effect.

Answer: ~~1008~~ −504

Cross out answers if you need to change them. Trying to correct an answer by writing over it can make it unclear.

When drawing graphs, lines of best fit should have a fair distribution of points above and below the line.

Read the scales on graphs carefully and check any reading is correct before using it in subsequent calculations.

How would you improve the accuracy of the results obtained?

Changes to experiments that improve accuracy are those which reduce either systematic or random errors.
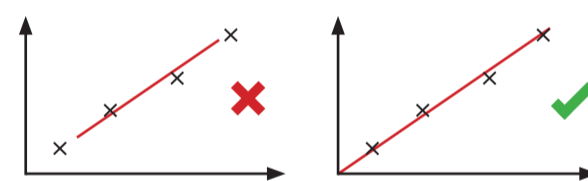
$R_f = 2.0 \div 5.0$
Answer: .....4.0..... ✅ **ECF**

Show clear working for calculations. Error carried forward may mean a response still gains marks if a mistake is made.

TLC separates substances by relative <u>adsorption</u> with the stationary phase.

Using key terms correctly is likely to be helpful, if not essential, in Level of Response question answers.

Lines of best fit must cover the full range of points. They don't need to extend to the axes or the origin if not appropriate.

Calculate the <u>speed of rotation</u> of the drum and the <u>absolute uncertainty</u> in this value.

Underline key instructions when reading the question and refer back to them to ensure all of them have been addressed.

The full candidate exemplar materials for the 2018 Biology A Level papers can be found on Interchange.

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