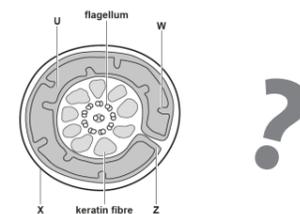
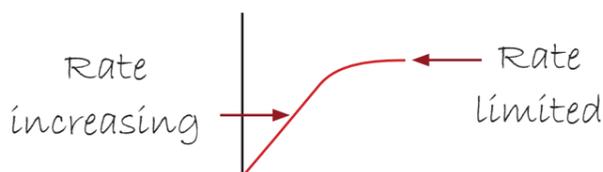


## Examiner comment summary – Biology A (H420)

Answer: 2 ❌  
 Answer: B ✅



Some candidates used numbers for multiple choice questions. They should use only letters A-D.

A common misconception was that limiting factors slow the rate of reaction. Rather, rate plateaus and is prevented from increasing further.

Practice is required in applying knowledge to unusual contexts. Weird diagrams can still be stuff you know!

Using figure 18, calculate the area under the curve

Pros                      Cons  
 ~~~~~  
 ~~~~~  
 ~~~~~

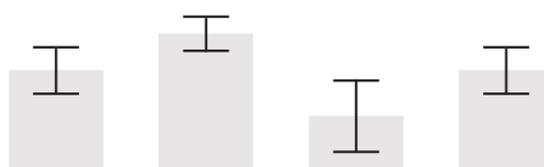
Chimpanzees have a shorter thumb relative to humans.  
 ✅

Candidates should refer to figures provided in the question if the question asks them to.

Balance level of response answers – address each aspect of the question roughly equally, and give both pros and cons when evaluating.

Comparative statements should be unambiguous.

|      |      |      |      |
|------|------|------|------|
| 0.00 | 0.02 | 2.71 | 3.84 |
| 0.10 | 0.21 | 4.61 | 5.99 |
| 0.35 | 0.58 | 6.27 | 7.82 |



Ringed the value being used from a critical values table can sometimes be sufficient to be credited a mark.

Plotting standard deviations appears to be challenging. Some candidates drew additional bars with little understanding of requirements.

Concise responses are the best responses. All marks are obtainable within the answer space provided.

0.34564524 ✅  
 0.346 ❌

1. ~~~~~ ✅  
 2. ~~~~~ ✅  
 Ans: ~~~~~ ❌

mitosis vs. meiosis  
 glycogen vs. glucagon  
 transcription vs. translation

Use calculator unrounded values during calculations to obtain the most accurate final value.

Show every step in calculations clearly. This allows method marks to be awarded in the absence of a correct final answer.

When technical terms are similar candidates should ensure they're answering about the right one!

Reverse transcriptase produces DNA ❌  
 Reverse transcriptase produces cDNA ✅

0.0540 (3 sig. fig.)                      Answer  
 3.045 × 10<sup>4</sup> (4 sig. fig.)                      →                      3 sig. fig.

~~~~~  
 a. ~~~~~  
 b. ~~~~~

Precise use of technical terms is important at this level.

The 'appropriate number of significant figures' is the same as the least accurate data provided in the question.

Underlining or circling key information in MCQs is sensible, as is jotting down ideas and equations.

1. ~~~~~  
 (iii) ~~~~~? →

breaking bonds makes energy ❌  
 breaking bonds releases energy ✅

a. ~~~~~ ❌  
 b. ~~~~~ ✅  
 c. ~~~~~ ❌

Data may be presented at the start of the question and not repeated in each subsequent part.

Energy cannot be created or destroyed, so any response that states that it can tends not to be credited in science examinations.

For multiple choice questions, eliminating options by annotating is good practice.

## Examiner comment summary – Biology A (H420)

0.00	0.02	2.71	3.84
0.10	0.21	4.61	5.99
0.35	0.58	6.27	7.82

Candidates should comment on or analyse the data provided – not their assumptions about what it should be.

$\chi^2$  ?

Candidates should understand where the expected values for chi-squared come from.



It is a common misconception that insects have a lower surface area to volume ratio than mammals.



Few candidates could name a material used as the stationary phase in thin layer chromatography.

Describe how a method that uses Benedict's reagent and a colorimeter could be calibrated

Candidates shouldn't waste time describing a whole practical protocol when the question asks about a specific aspect of the practical.

Percentage of DNA bases that are different = 0.177%

Some candidates tried to convert small numbers into percentages when they were already percentages (albeit tiny ones).



Calculating actual area shown in a magnified image requires division by the magnification squared.

Podocytes are usually unable to undergo mitosis as they have lost the necessary organelles **X**

It was a common misconception that podocytes could not undergo mitosis as they no longer had a nucleus or organelles.

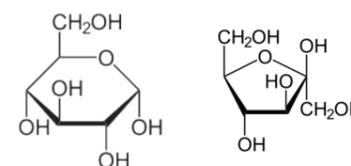
100% increase =  $\times 2$

800% increase =  $\times 9$

A 100% increase means double, not equal. An 800% increase is nine times as much, not eight times.

a. *mellivora capensis* **X**  
b. *Taxidea taxus* **✓**  
c. *mustellidus Everetti* **X**

Considering which answers to multiple choice questions are impossible is a good approach.



Candidates ought to know that a monosaccharide does not contain a glycosidic bond.

$\text{NO}_2^-$  **X**     $\text{NO}_3^-$  **✓**

If formulae are used instead of naming ions then they must be correct to gain credit.

The full candidate exemplar materials for the Biology A (H420) papers can be found on Interchange.

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