

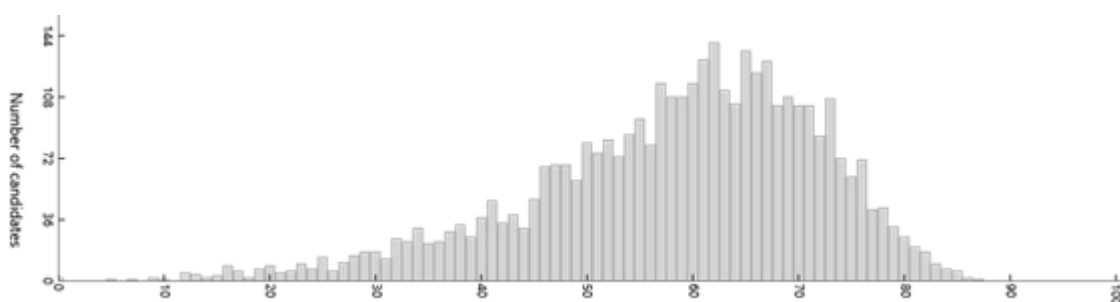


Summary report of the 2024 ATAR course examination report: Human Biology

Year	Number who sat	Number of absentees
2024	3797	52
2023	3680	62
2022	3791	73
2021	4216	78

The number of candidates sitting and the number attempting each section of the examination can differ as a result of non-attempts across sections of the examination.

Examination score distribution



Summary

The examination discriminated well, producing scores from 0.00% to 87.04%. The examination was an appropriate length with most candidates attempting the final questions.

Attempted by 3797 candidates Mean 58.23% Max 87.04% Min 0.00%

Section means were:

Section One: Multiple-choice	Mean 75.66%		
Attempted by 3797 candidates	Mean 22.70(/30)	Max 30.00	Min 0.00
Section Two: Short answer	Mean 52.67%		
Attempted by 3794 candidates	Mean 26.33(/50)	Max 42.92	Min 0.00
Section Three: Extended answer Unit 3	Mean 45.03%		
Attempted by 3730 candidates	Mean 4.50(/10)	Max 9.75	Min 0.00
Section Three: Extended answer Unit 4	Mean 46.92%		
Attempted by 3725 candidates	Mean 4.69(/10)	Max 9.75	Min 0.00

General comments

Candidates were able to demonstrate a thorough knowledge of the Human Biology syllabus. The mean for Section One: Multiple-choice was strong with only a select few questions proving to be a challenge. In both Sections Two and Three, candidates could recall basic facts, but only the top candidates could effectively answer the in-depth analysis questions. In Section Three, the Unit 3 and Unit 4 questions produced comparable mean scores.

Advice for candidates

- Expect a comprehensive coverage of most of the syllabus dot points in the examination; however, not every syllabus dot point will be examined. Although the same syllabus dot points may appear in consecutive examinations, questions will be structured in new and different contexts.

- Read questions carefully to ensure you understand the meaning of verbs used in the question. You need to know the difference between a question requiring you to 'name' or 'identify' compared to one requiring you to 'describe' or 'explain'. Refer to the *Glossary of key words used in the formulation of questions*, which is available online through the course page.
- Focus on interpreting the question and providing a succinct answer, rather than simply writing down all you have learnt on the topic. Stating key terminology or a rote learnt answer will often not address the entire question. Instead, you need to engage higher-order thinking skills and apply your knowledge.
- The most thorough and complete answers in the Extended answer section of the examination are produced by those candidates who complete a plan. Take time to plan and ensure all parts of the question are addressed.
- Your selection of question in the Extended answer section is very important. You should read the question carefully and predict which of the options will give you the highest possible mark. There may be one part of a question which appears more challenging, but that question overall might be more accessible and will provide a higher final mark for you.
- Present annotated diagrams, charts, or tables to construct answers to questions in the Short and Extended answer sections. This technique is particularly important in the Extended answer section to help you write clear and precise answers.

Advice for teachers

- Students require a detailed knowledge of all syllabus dot points and the ability to apply these points to new and different contexts. Simple recall and rote learning of facts are not enough for students to gain full marks in the examination. Encourage students to think critically and apply their knowledge to unique scenarios.
- There were several specific syllabus dot points that were not answered well in this examination. These include:
 - explaining evolutionary relationships using evidence from a phylogenetic tree
 - distinguishing between recombinant DNA technology and gene therapy
 - justification of the identification of tool types and cultures
 - role of atmospheric carbon in carbon-14 dating
 - mutations associated with DNA replication
 - application of natural selection to explain why sickle cell anaemia persists in populations
 - role of aldosterone in water balance
 - role of the hypothalamus in ADH concentration
 - structural characteristics of neural pathways.
- A constant challenge, regardless of the syllabus content being addressed, is the ability for students to contrast similar concepts. This suggests more practise on this style of question would be beneficial.
- Examination technique should be modelled and reinforced throughout the year during classroom lessons and assessments. Students need to be given ample practice at decoding Extended answer questions as part of their school-based assessment program.
- Mathematical skills are a required element in the syllabus. Students require ample practice at applying all required mathematical skills in a scientific method context.
- There is a general trend that students lack an in-depth understanding of the concepts covered in Unit 4, while their understanding of Unit 3 appears stronger.

Comments on specific sections and questions

Written examination

Section One: Multiple-choice (30 Marks)

This section had an overall mean of 75.66%. The maximum mark achieved in this section was 100% and the minimum mark was 0%. Generally, questions were well answered with only Questions 4, 6, 13, 27 and 29 having mean scores below 55%. Candidates performed well on Questions 1, 11, 15, 17, 18, 20, 22, 25, 26 and 28 with mean scores all above 85%. Candidates performed well on straightforward recall style questions and found the more complex, multi-step questions challenging.

Section Two: Short answer (50 Marks)

This section had an overall mean of 52.67%. The maximum mark achieved on the section was 85.8% and the minimum mark was 0%. Questions 31, 33 and 34 all had mean scores above 50%. Question 31 focused on the spinal reflex arc and synapses and was the most successfully completed question in this section. Question 35 on disease and immunity was the most challenging question of Section Two with a mean score of 46.8%. Throughout the section candidates demonstrated a good recall of basic facts and knowledge. The higher-order and application questions were successful in differentiating candidate answers and provided an opportunity for candidates to demonstrate their understanding of course content. The most difficult questions throughout the section were those that required application of theory to explain a new scenario or questions that required a focused contrasting of similar topics.

Section Three: Extended answer Unit 3 (10 Marks)

This section had an overall mean of 45.03%. The maximum mark achieved on the section was 97.5% and the minimum mark was 0%. Question 38 was the most successfully answered question with a mean of 53.2%, while Question 37 had a considerably lower mean of 40.9%. Generally, candidates who attempted questions using annotated diagrams and tables were able to construct more precise and clear answers.

Section Three: Extended answer Unit 4 (10 Marks)

This section had an overall mean of 46.92%. The maximum mark achieved on the section was 97.5% and the minimum mark was 0%. Question 39 was the most successfully answered question with a mean of 49.9%, while Question 40 had a considerably lower mean of 41.2%. Generally, candidates who attempted questions using annotated diagrams and tables were able to construct more precise and clear answers.