

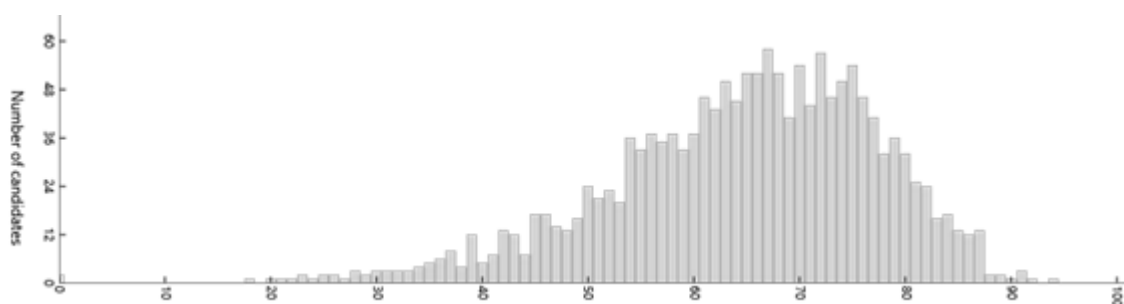


Summary report of the 2024 ATAR course examination report: Biology

Year	Number who sat	Number of absentees
2024	1588	19
2023	1593	22
2022	1554	35
2021	1716	29

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 paper had three sections. Section One comprised 30 Multiple-choice questions, Section Two five Short answer questions and Section two Extended answer questions from Unit 3 and two from Unit 4. Candidates were required to answer all questions in Sections One and Two, and one question from each of Units 3 and 4 in Section Three.

Attempted by 1588 candidates Mean 64.46% Max 93.50% Min 0.00%

Section means were:

Section One: Multiple-choice	Mean 77.96%		
Attempted by 1588 candidates	Mean 23.39(/30)	Max 30.00	Min 0.00
Section Two: Short answer	Mean 61.80%		
Attempted by 1586 candidates	Mean 30.90(/50)	Max 46.50	Min 0.00
Section Three: Extended answer Unit 3	Mean 46.80%		
Attempted by 1578 candidates	Mean 4.68(/10)	Max 10.00	Min 0.00
Section Three: Extended answer Unit 4	Mean 54.87%		
Attempted by 1566 candidates	Mean 5.49(/10)	Max 9.50	Min 0.00

General comments

Candidates were generally well prepared for the examination. Overall, they performed well in all sections of the examination and across a broad range of topics.

Advice for candidates

- Use formal language and correct technical terms when answering questions.
- Include units with measurements and quantities.
- Provide minimum and maximum values if asked for a range, not the difference between them.
- When graphing, include all key variables/elements in the graph title. Use as much of the grid provided as possible and break axes where appropriate.
- Take care when selecting appropriate nomenclature to represent co-dominant or incompletely dominant alleles at a single gene. For example, allele for red flower = C^R and allele for white flower = C^W .
- Do not repeat or rephrase the question in your answer.
- Read the question carefully and make sure that you answer the question being asked. Be aware of key words in the question as well as subtle components that require attention.
- When asked for several distinctly different features/examples, provide multiple unique features without significant overlap with others; avoid similar points or subtle variations of the same point.
- Develop an in-depth knowledge of key topics and concepts so that you can provide full answers to more challenging questions.
- Spend some time planning your answers to Section Three (Extended answer) questions so that you do not miss crucial details and repeat points. Consider using headings to help organise your ideas when answering these questions.
- Re-read your answers to check that the information you have provided makes sense.
- Communicate clearly in your written answers and make sure that your writing is legible.

Advice for teachers

- Prepare students to answer questions from across the whole syllabus.
- Follow the current version of the syllabus and do not spend time on topics that have been removed from the syllabus, for example, epigenetics.
- Provide opportunities for students to practise decoding questions and recognising subtle components of questions that require attention. Familiarise students with the topics covered under different syllabus statements to assist them in decoding questions based on these statements.
- Prepare students to answer questions using correct/specific technical terms.
- For biotechnology methods, such as PCR, gel electrophoresis, profiling and sequencing, focus on applications of methods rather than on intricate details of how each method functions.
- Focus on correcting some common misconceptions, such as when homologous chromosomes pair, when DNA replication occurs in eukaryotic cells, the distinction between microevolution and macroevolution, and the distinction between the reliability and validity of an experiment.
- Pay particular attention to concepts that students find challenging, such as polygenic inheritance and gene flow.

Comments on specific sections and questions

Overall, the highest mean (77.96%) was from Section One (Multiple-choice). Section Two (Short answer) was generally done well with Section Three (Extended answer) having the lowest mean. Among the Extended answer questions, candidates found Unit 3 questions more challenging than Unit 4.

Section One: Multiple-choice (30 Marks)

Candidates performed well in this section (mean 77.96%). All candidates attempted every question and at least one candidate achieved full marks for this section. Although some questions had high means, no single question was answered correctly by every candidate.

Nine questions in this section had mean scores of at least 90%, and another 10 questions had mean scores of at least 80%. Most of these questions tested factual recall from topics across the syllabus but several required applications of knowledge. Question 1, which asked candidates about DNA structure, had the highest mean (98%). Four questions had means below 50%. Question 14 had the lowest mean of 27%. This question required candidates to identify a key distinction between binary fission and mitosis. Many candidates mistakenly chose option (b), which incorrectly stated that homologous chromosomes pair during mitosis, but not in binary fission. Question 7 required candidates to recognise that changes in the number of trilobite and ammonite families through time are an example of macroevolution; many candidates mistakenly suggested this was an example of microevolution.

Section Two: Short answer (30 Marks)

Almost all candidates attempted this section and candidates performed well (mean 61.8%). Generally, they answered some parts of every question well but there were difficulties with other parts. At least one candidate achieved full marks for every question.

Section Three: Extended answer Unit 3 (20 Marks)

Most candidates attempted this section. The mean score was 46.8% and at least one candidate achieved the maximum score. More candidates selected Question 37 than Question 36. The mean scores for both questions were similar, although at least one candidate achieved the maximum score for Question 37 but none did so for Question 36.

Section Three: Extended answer Unit 4 (20 Marks)

Most candidates attempted this section and did well, with a mean score of 54.9%. Nevertheless, this was the only part of paper for which no candidate achieved the maximum mark. Question 38 was more popular than Question 39 and generated a higher mean score but a lower maximum mark.