Government of **Western Australia**
School Curriculum and Standards Authority

Summary report of the 2017 ATAR course examination:
Biology

Year	Number who sat	Number of absentees
2017	1810	20
2016	1822	30

Examination score distribution – Written
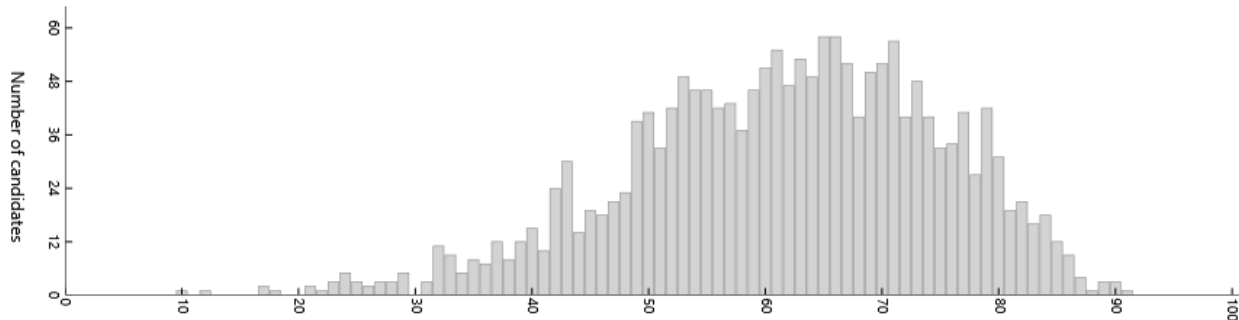
Summary

The examination paper contained three sections. Section One comprised 30 multiple-choice questions, Section Two comprised five short answer questions and Section Three comprised 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. The examination was attempted by 1810 candidates and produced a mean of 61.42%. Scores ranged from a minimum of 9.75% to a maximum of 91.25%. The standard deviation was 13.33%.

Section means were:
Section One: Multiple-choice	Mean 71.25%		
Attempted by 1810 candidates	Mean 21.38(/30)	Max 30.00	Min 7.00
Section Two: Short answer	Mean 60.16%		
Attempted by 1810 candidates	Mean 30.08(/50)	Max 46.75	Min 1.50
Section Three: Extended answer Unit 3	Mean 53.93%		
Attempted by 1783 candidates	Mean 5.39(/10)	Max 10.00	Min 0.00
Section Three: Extended answer Unit 4	Mean 47.02%		
Attempted by 1790 candidates	Mean 4.70(/10)	Max 10.00	Min 0.00

General comments

Overall results were a little lower than those achieved in 2016. The paper achieved good discrimination, and the results for each section, especially One and Two, showed a positive correlation with the examination total, with the value of the correlation ranging from 0.95 for Section Two to 0.74 for Section Three, Unit 4. The section-based reliability for the paper was high (0.80), indicating that candidates generally scored consistently across sections. The quality of candidate responses continued to improve this year. Candidates were well-prepared, with the majority attempting all questions.

Advice for candidates
- Read the question carefully and make sure that you answer the question asked.
- Use formal and precise language and scientific terminology in answering questions.
- Communicate clearly in your written answers.

Advice for teachers
- Instruct your students to answer questions according to the 'instruction' verb supplied by the question e.g. *state, define, discuss, explain*.
- Give your students practice at decoding questions.
- Prepare students to be able to provide in-depth, detailed answers for the extended answer questions in Section Three.

Comments on specific sections and questions

Candidates answered the short answer and especially the multiple-choice questions well but had more difficulty with the extended answer questions in Section Three.

Section One: Multiple-choice (30 Marks)
This section produced the best results. Most candidates got most questions correct but no question was answered correctly by all candidates. Two questions (5 and 23) had mean scores above 90%. These questions tested factual recall from the *Infectious disease* area of the syllabus.

Eleven questions (1, 2, 6, 8, 11, 13, 14, 20, 21, 22 and 26) had mean scores between 80% and 90%. These questions tested material from across the syllabus. Almost half of these tested factual recall (1, 2, 13, 21, 22) while the remainder (6, 8, 11, 14, 20, 26) required application of knowledge.

Five questions (7, 15, 16, 29 and 30) had mean scores below 50%. These questions tested the application of knowledge from different areas of the syllabus. Question 7 required candidates to realise that each tRNA molecule adds one amino acid to a growing polypeptide chain. The most common wrong answer implied that each tRNA molecule adds three amino acids. Question 15 required candidates to work out the range in the number of flowers per plant from a data table. Many candidates answered instead about the range in the number of seeds per flower. Question 16 asked candidates to calculate the mean number of seeds per flower for Plant 2, but many candidates failed to recognise that this plant had only three flowers (not four).

Questions 29 and 30 had by far the lowest means at 26% and 23%, respectively. The most common wrong answer to Question 29 indicated that the number of susceptible hosts would *increase*. Question 30 required candidates to realise that homeostasis occurs in all living organisms, not just a subset. The most common wrong answer indicated that homeostasis only occurs in plants and animals (and not in other eukaryotes or in prokaryotes).

Section Two: Short answer (100 Marks)
There was at least one candidate achieving full marks for each question, except for question 32, where the maximum score was 97.5%. On average, candidates made reasonable or better attempts at most parts of these questions. There was at least one candidate achieving full marks for every part of every question (although no one candidate achieved full marks for the entire section).

Section Three: Extended answer Unit 3 (20 marks)
Most, but not all candidates attempted this part of the examination.

Section Three: Extended answer Unit 4 (20 marks)
While most, but not all candidates attempted this part of the examination, it produced the worst performance in the entire examination.