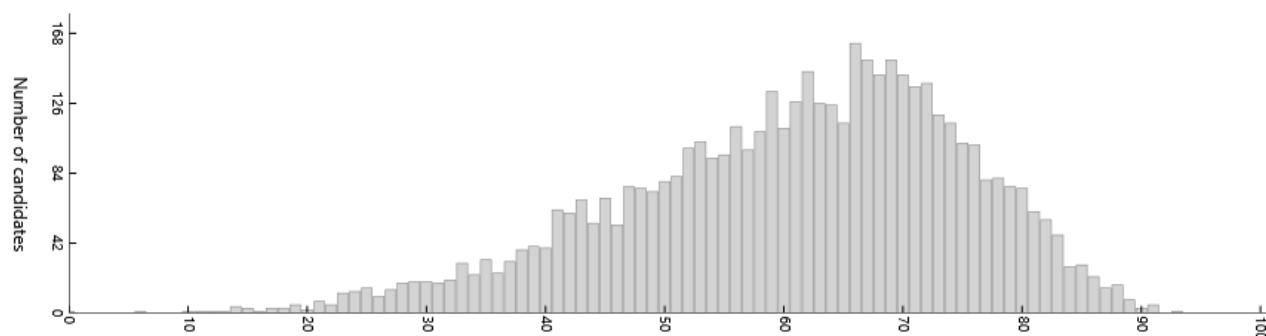




Summary report of the 2017 ATAR course examination: Human Biology

Year	Number who sat	Number of absentees
2017	4861	63
2016	4709	85

Examination score distribution – Written



Summary

This year's examination was attempted by 4861 candidates who achieved an overall mean of 60.58%. The paper discriminated well, producing scores ranging from 0.00% to 91.25%. The reliability of the examination was 0.86 and the standard deviation was 14.32%. Most candidates (99%) attempted all questions, indicating that the paper was of an appropriate length.

Section means were:

Section One: Multiple-choice	Mean 74.57%		
Attempted by 4861 candidates	Mean 22.37(/30)	Max 30.00	Min 0.00
Section Two: Short answer	Mean 56.98%		
Attempted by 4857 candidates	Mean 28.49(/50)	Max 46.00	Min 2.00
Section Three: Extended answer	Mean 49.35%		
Attempted by 4800 candidates	Mean 9.87(/20)	Max 19.50	Min 0.00

General comments

This was the second examination of the ATAR Year 12 Human Biology course. It was a fair examination with a range of question type and difficulty that reflected the syllabus. The majority of candidates were able to attempt all or most questions and timing did not seem to be an issue. Candidates demonstrated satisfactory recall of facts and simple understanding but struggled when required to sequence a process or synthesise knowledge from a variety of areas. Compared to previous years, there was a greater number of questions requiring interpretation and a degree of analysis, synthesis and application of knowledge in the Short answer section. While questions were challenging, they were not beyond the capability of the candidates. The Extended answer section had the lowest mean but the questions were relatively even in their difficulty.

Advice for candidates

- Wherever possible present annotated diagrams or construct tables to complete your answer. This applies to both short answer and extended answer style questions. This technique not only helps you present clear, precise answers but ensures that markers easily can read and follow the answer you have written.
- You must read questions fully and ensure you understand the meaning of the operational verbs used in the question. To provide an answer that correctly addresses the question

you must know the difference between questions requiring you to 'state', 'name' or 'identify' to ones requiring you to 'describe', 'explain' or 'justify'.

- In Section Three: Extended answer the most thorough and complete responses were completed by those candidates who showed evidence of planning their answer. Taking time to write a brief plan and checking that you are able to address all required elements of the question being asked is an essential examination technique.
- Always write your best answer first. When questions state a numerical value of responses required then that number of responses will be marked. For example, if you are asked to provide two reasons in your answer and you provide three, the first two responses are considered by the markers to address the question and marked accordingly.
- When asked to describe or explain concepts ensure you do not use text already stated in the question. No marks can be awarded for restating information already given in the question.

Advice for teachers

- Last year it was noted that a significant proportion of candidates did not have a good grasp on some of the new syllabus points in the ATAR Human Biology course that were not in the previous Stage 3 WACE syllabus. The main problem in 2016 was in the hominid evolution topic. This year that has certainly improved and the new course seems to have been delivered well. The only area where this still seemed to be an issue was on the question relating to fever. This topic is again new to the current ATAR course. Teachers are encouraged to address the concept of fever as it relates to immunity in more detail.
- The textbook written by Newton and Joyce has long been the most favoured and preferred for Human Biology teaching in Western Australia. However, teachers are reminded that the textbook is not the syllabus. Teachers should as always supplement their teaching and learning with other references and resource materials beyond the Newton and Joyce textbook.
- Teaching examination technique should be a key part of the teaching and learning completed throughout the year in the classroom. Candidates need to have ample time to practise constructing responses, particularly to extended response style questions. Teachers should be modelling how to break a question down to identify what is being asked and how candidates should go about it. An area to consider is for example, if candidates are asked to describe or explain then that style of question will generally be worth at least three marks. Candidates therefore need to be able to provide at least three components to their descriptions and explanations. Again, this should be modelled and reinforced throughout the year during classroom teaching and in the assessments candidates are completing at school.

Comments on specific sections and questions

Items in Section One: Multiple-choice worked very well with mean scores that ranged from 33.29% to 98.42%. Section Two: Short answer produced pleasing results with means that ranged from 43.34% to 75.84%. Section Three: Extended answer was the most challenging section of the paper, with the lowest overall mean. In Section Three: Extended answer, candidates performed similarly on questions 40 and 42 but found question 41 more difficult.

Section One: Multiple-choice (30 Marks)

Section One: Multiple-choice had an overall mean of 74.57%. Generally, questions were answered well with only Questions 3, 12, 16 and 29 having means below 55%. In Question 3 many candidates incorrectly selected alternative (d) showing confusion between sodium ion concentration being the stimulus for aldosterone production instead of correctly identifying the stimulus as the potassium ion levels in the blood. Question 12 required candidates to select the statements which best described ethical considerations in biotechnology. Many candidates found it problematic and incorrectly included advancement of scientific

understanding as an applicable statement regarding ethics. Question 16 was challenging for a number of candidates who confused a U-shaped dental arcade as being associated with modern humans. Question 29 proved surprisingly difficult with a large proportion of candidates unable to identify the laurel-leaf tool as being associated with Solutrean tool culture. Incorrect responses to this question were relatively evenly dispersed among the other three alternatives indicating that it was not well understood.

Questions 5, 7, 8, 10, 14, 18, 19, 23, 24 and 25 were the easiest with means all above 85%. As expected, candidates performed well on these straight forward, recall style questions as opposed to the more complex, multi-step questions.

Section Two: Short answer (100 Marks)

Section Two: Short answer had an overall mean of 56.98%. Questions 31, 32, 33, 35, 36 and 38 all had means above 55%, while questions 34, 37 and 39 had means below 55%. The hardest question in Section Two: Short answer was question 34. Generally, candidates demonstrated a good recall of facts and general knowledge in most questions. Many candidates struggled with the questions that required them to provide detailed explanations rather than just simple descriptions.

Section Three: Extended answer (40 Marks)

Section Three: Extended answer had an overall mean of 49.35%. Question 42 was the most successfully answered question with a mean of 51.45%, followed closely by Question 40 with a mean of 49.40%. Question 41 proved to be the most challenging with a low mean of 46.26%. Generally, the answers provided in Section Three: Extended answer were satisfactory. Candidates who showed proof of structured planning and attempted to answer the questions with the aid of tables and annotated diagrams performed better than those who did not.