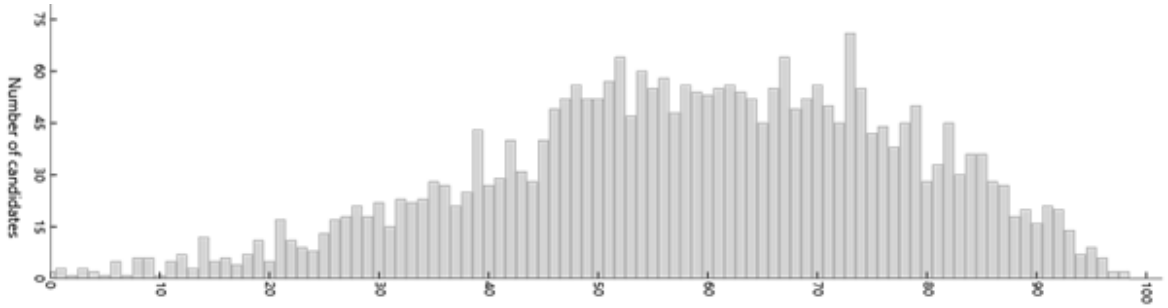
Government of **Western Australia**
School Curriculum and Standards Authority

Summary report of the 2020 ATAR course examination: Physics

Year	Number who sat	Number of absentees
2020	2861	40
2019	2770	58
2018	3165	35
2017	3304	33

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–Written



Summary

The mean of 58.42% indicates a sound examination and the standard deviation of 19% suggests that candidate preparation varied considerably. Special relativity and descriptive questions provided greatest discrimination in candidate ability. The mean is comparable to 2019 results. Section Two appeared to be the most accessible section for candidates, followed by Section One and lastly Section Three. This is a contrast to previous examination results where Section One had a higher mean than Section Two. Feedback on the examination has been positive.

Attempted by 2858 candidates	Mean 58.42%	Max 98.36%	Min 0.00
Section means were:			
Section One: Short response	Mean 58.58%		
Attempted by 2857 candidates	Mean 17.58(/30)	Max 30.00	Min 0.00
Section Two: Problem-solving	Mean 61.29%		
Attempted by 2856 candidates	Mean 30.64(/50)	Max 49.46	Min 0.00
Section Three: Comprehension	Mean 51.01%		
Attempted by 2831 candidates	Mean 10.20(/20)	Max 20.00	Min 0.00

General comments

The paper was well-balanced with some question parts being discriminating and challenging while others were straightforward and accessible to the majority of candidates. The contexts used were familiar. There were a number of question parts in which candidates achieved a mean of over 75%. Candidates found explanation questions more difficult to answer in a clear and coherent manner. Often harder question parts were left blank with some evidence that candidate's spent time thinking about the answer but then failed to make an attempt.

Advice for candidates

- Practise as often as possible with pen and paper using clear handwriting and setting out to make it easy to follow your workings and answer.
- Read the question carefully. For example, clearly circle the two points used to calculate a gradient or else full marks cannot be achieved. The same applies to instructions regarding significant figures.
- Include conclusions in your explanations. It is important to relate any explanation back to an observation.

Advice for teachers

- Devote more class time and assessment tasks to answering descriptive questions. Being able to explain concepts succinctly and sequentially is an important skill. It is every bit as important as a mathematical application of the same concept.
- Practise more examples of frames of reference so that students can develop a better understanding of the concept.

Comments on specific sections and questions

Section One: Short response (53 Marks)
Questions 3, 9, 10 and 11(b) in this section were design as discriminators and were also the questions with the fewest attempts. The questions with the lowest mean scores were question 6 and 11(b). Question 6 required candidates to understand the definition of an electric field and Force per unit Charge. Very few candidates appeared to understand this and tried to manipulate Coulomb's Law. Question 11(b) required candidates to apply the concept of net force exerted by one body in a system on another.

Section Two: Problem-solving (92 Marks)
The mean for this section was the highest for this paper. The mean was less than 50% in question parts that required candidates to explain rather than calculate their answers. Only two questions requiring calculations scored less than 50%.

Section Three: Comprehension (39 Marks)
The mean for this section was the lowest for this paper. Candidates performed better in Question 21 compared to Question 20. Question 20 presented a familiar context with some variation to the standard questions, and Question 21 incorporated transformers, transmission of power, comprehension and equilibrium.