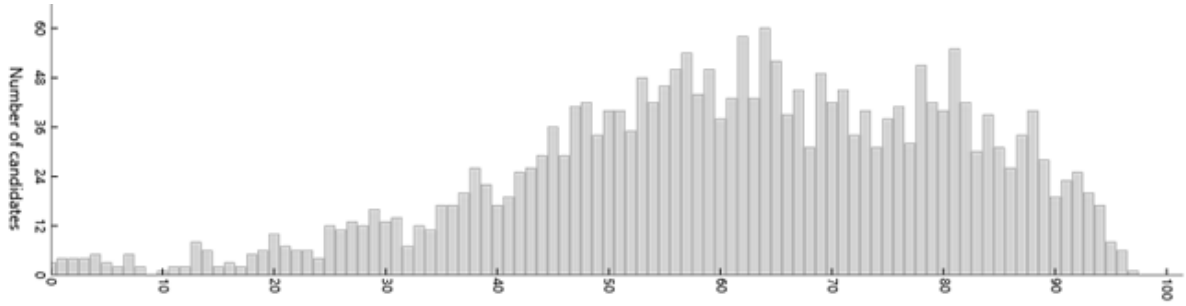
# Summary report of the 2023 ATAR course examination report: Physics

| Year | Number who sat | Number of absentees |
|---|---|---|
| 2023 | 2410 | 35 |
| 2022 | 2545 | 51 |
| 2021 | 2680 | 43 |
| 2020 | 2861 | 40 |

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 2023 examination had an overall mean of 61.20%, up from 58.22% in 2022, and was able to discriminate between the top candidates. The examination proved to be an appropriate length and accessible, as most questions were attempted by the vast majority of candidates. The maximum score was achieved on every question.

| | | | |
|---|---|---|---|
| Attempted by 2407 candidates | Mean 61.20% | Max 97.37% | Min 0.00% |
| | | | |
| Section means were: | | | |
| Section One: Short response | Mean 62.39% | | |
| Attempted by 2407 candidates | Mean 18.72(/30) | Max 30.00 | Min 0.00 |
| Section Two: Problem-solving | Mean 62.46% | | |
| Attempted by 2402 candidates | Mean 31.23(/50) | Max 49.46 | Min 0.00 |
| Section Three: Comprehension | Mean 56.28% | | |
| Attempted by 2388 candidates | Mean 11.26(/20) | Max 19.76 | Min 0.00 |

### *General comments*

Overall, some candidates performed very well. These candidates displayed a sound grasp of the concepts examined and a high level of mathematical proficiency. Some candidates struggled with questions requiring an explanation. Frequently, candidates did not set their work out in a legible manner. Errors were not crossed out, the sequence of steps taken was not obvious and the handwriting of some made it almost impossible to decipher.

*Advice for candidates*

- Pay attention to setting out your answers in an orderly manner.
- Use the diagrams provided to show how you have solved a problem. This is particularly important on static equilibrium questions.
- Practise questions that require you to give explanations as well as perform calculations.
- Ensure that you answer the question being asked and not one similar to it that you have answered previously.

*Advice for teachers*

- Include explanation questions in your classroom assessments. Answering this type of question is a Physics skill and is equally as important as problem-solving.
- Demonstrate derivation techniques. Many students struggle with starting from first principles and building on from there, and they need the opportunity to practise this in order to achieve better results on derivation questions in the examination.
- Ensure students know and understand concepts, as well as how to use formulae to calculate numerical answers.

## *Comments on specific sections and questions*

**Section One: Short response (54 Marks)**

Section One had many familiar contexts and was attempted by almost all candidates. The questions in Section One ranged in level of difficulty and problem-solving requirements. Question 6, which required a simple description of how the photoelectric effect works, and Question 7, which required a simple description of Lenz's Law, both produced very low means considering the very familiar contexts and level of complexity. By contrast, Question 12, a challenging problem which asked for a multi-step derivation, had a higher mean.

**Section Two: Problem-solving (93 Marks)**

The overall mean (62.46%) for Section Two was above the mean for the examination, however candidates did not perform consistently across all questions. Questions 13, 17 and 18 covered familiar concepts, although in slightly different contexts. The inability to deconstruct a situation and apply those same concepts suggests that candidates had not been exposed to a wide variety of questions. Generally, candidates found later question parts in this section more difficult, frequently requiring them to describe/explain/discuss situations.

**Section Three: Comprehension (41 Marks)**

The overall mean for Section Three rose this year to 56.28%, from 47.29% in 2022. However, the mean for Section Three was still lower than for the other two sections of the examination. Candidates generally performed better on Question 19 than Question 20. In both questions, many candidates demonstrated an understanding of the text presented.