2015 NZ Scholarship Assessment Report

Physics

Part A: Commentary

Comment on the overall response of candidates to the 2015 examination. Successful candidates were well prepared and had a sound grasp of the physics required at this level. Candidates who gained Scholarship with Outstanding Performance found the paper straightforward. Their conceptual understanding of fundamental physics was excellent. Their mathematical skills complemented their physical understanding and they were able to communicate their overall understanding simply and accurately. Some candidates, however, were not sufficiently prepared for this examination. There were a large number of candidates who were unable to complete the questions. These candidates also found the level of algebraic manipulation required challenging. Candidates require considerable exposure to various physical situations throughout their course work to enable them to demonstrate sufficient maturity of thought to achieve success in Scholarship.

Part B: Report on performance standard

Scholarship with Outstanding Performance	Candidates who were awarded Scholarship with Outstanding Performance commonly: Identified the correct physical concepts to apply to a problem Used physical insight before using mathematics to solve problems Evaluated the validity of a solution to a problem Made no mathematical errors Had a broad knowledge across the entire curriculum Were able to explain in words complicated physical concepts without including incorrect or spurious descriptions Explained their reasoning at each step during a calculation Knew how to apply conservation laws to solve problems
Scholarship	Candidates who were awarded Scholarship commonly: Showed good familiarity with most of the areas of physics covered in the paper Were able to utilise basic physics concepts in the correct manner Made few mathematical errors Knew how to apply conservation laws to solve problems Understood the fundamental concepts relating to capacitors and inductors Explained their answer to the problem using relevant and clearly stated concepts and appropriate language
Other candidates	Candidates who were not awarded Scholarship commonly: Left questions unanswered Applied physics concepts incorrectly Struggled to explain complicated physics concepts in words Relied on intuition rather than fundamental laws of physics Made algebraic errors Wrote rambling generalised answers that contradicted earlier discussion points or made points irrelevant to the question Did not explain their answers