

# **Scholarship**

## **2010 Assessment Report**

### **Science**

## **SCHOLARSHIP WITH OUTSTANDING PERFORMANCE**

### **Candidates who were awarded Scholarship with Outstanding Performance typically:**

- clearly identified what each question was asking and covered most aspects
- identified and applied the scientific principles relevant to each question and demonstrated scientific insight
- structured their answers in essay form, logically and often using paragraphs to separate distinct aspects of the question
- expressed their ideas clearly and accurately and justified their statements
- were able to consistently apply a broad base of knowledge and skills learned to unfamiliar contexts
- integrated a range of scientific knowledge in their discussions, so that their answers were broadly based
- reviewed and evaluated their answers and improved on some parts by adding additional paragraphs
- question one: candidates explained fully how the results could be cross checked
- question two: candidates linked geological processes separated by large distances
- question three: candidates fully discussed the different methods of dealing with oil spills
- question four: candidates realised that alpha-decay of uranium-238 is followed quickly by the release of two beta-particles, from the short half-lives of thorium-234 and protactinium-234, and proposed a pattern seeking method to determine the safety of depleted uranium
- question five: candidates realised that the time delay between signals reflected from adjacent layers is due to both the thickness and the speed of sound in the intervening layer.

## **SCHOLARSHIP**

### **Candidates who were awarded Scholarship but not Scholarship with Outstanding Performance typically:**

- read the questions carefully and related the questions to their learning
- identified and applied the scientific principles relevant to each question
- expressed their ideas clearly, generally accurately and covered most or all aspects of nearly all questions
- demonstrated scientific insight into aspects of most questions
- applied relevant knowledge to unfamiliar contexts enabling them to effectively answer the question
- were able to apply a broad base of knowledge and skills learned to unfamiliar contexts
- reviewed their answers and improved on some parts by adding additional paragraphs
- question one: candidates explained how most results could be cross checked
- question two: candidates linked sediment from the Kaikoura canyon to the violence of Taupo volcanoes
- question three: candidates discussed effectively the different methods of dealing with oil spills
- question four: candidates understood that the question was about whether the radiation from depleted uranium due to dispersal is harmful
- question five: candidates linked the need for low frequency waves to allow for diffraction around obstacles, but at the cost of reduced resolution.

## OTHER CANDIDATES

### **Candidates who were not awarded Scholarship or Scholarship with Outstanding Performance typically:**

- did not read the questions carefully
- often only restated the question
- often just repeated statements in a different way or generalised, even when they were on the right track
- identified only some of the scientific principles relevant to each question
- expressed their ideas with insufficient clarity and accuracy
- covered some aspects of some questions, or focused on only a narrow aspect
- demonstrated only occasional scientific insight
- gave irrelevant information possibly because they did not understand what was required by the question
- could not apply information or skills learnt to a new context
- applied rote learnt skills and information from previous examination questions, rather than adapting knowledge and skills to the new questions and contexts
- did not show evidence of either planning or reviewing their answers
- question one: candidates could not explain how results were cross checked
- question two: candidates were unable to link key geological processes
- question three: candidates were not able to discuss all three methods of dealing with oil spills
- question four: candidates did not understand that the question was about whether the radiation from depleted uranium due to dispersal is harmful
- question five: candidates did not clearly state how the concepts of reflection, transmission, and absorption related to the question.

## OTHER COMMENTS

Correct examination technique is particularly important for success in Scholarship. Answers must be constructed showing underpinning knowledge and skills, as well as the critical thinking required at this level.

There were 50% more candidates this year than in previous years. Unfortunately there was not an increase in able candidates; just a very long tail. Candidates must prepare well for Scholarship examinations and be prepared to answer questions drawing on the breadth of knowledge in a full level 3 Science course.