Scholarship

2010 Assessment Report

Biology

COMMENTARY

In 2010, candidates were responding to the bullet points rather than linking them to the main question. Some candidates labelled the bullet points, for example, a, b, c and presented fragmented responses rather than answer the questions coherently.

While successful candidates were able to display a sound understanding of biological concepts in unfamiliar contexts, there were a significant number of candidates who showed poor understanding of basic ecological principles. As such they were unable to relate the different conditions that exist in different ecosystems in NZ or in other parts of the world.

Some scripts were barely legible and often words were illegible which meant candidates may have not have been given credit for correct knowledge.

Candidates need to apply their knowledge to the question asked. Some candidates who had pre-prepared answers from previous years' examinations showed a lack of ability to apply their knowledge and concepts in the context of the question. For example, Gause's Principle was a concept that was mentioned in all of the questions by a few candidates. This was irrelevant in the context of the questions.

SCHOLARSHIP WITH OUTSTANDING PERFORMANCE

Candidates who were awarded Scholarship with Outstanding Performance typically:

- wrote several possible explanations for each piece of evidence given in each question e.g. mutation, in-complete dominance and supplementary genes for three varieties of *M.excelsa* (depth)
- fully discussed each aspect of the question in all three questions (breadth)
- linked the bullet point ideas to answer the question as a whole
- planned in detail
- wrote a logical, coherent answer which integrated ideas and concepts
- demonstrated a deep understanding of biological concepts
- used biological terms correctly throughout their answer
- processed the resource material and elaborated on it accurately and fully in their answers.

SCHOLARSHIP

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

- used appropriate terminology
- lacked depth or breadth in at least one question
- included irrelevant or inaccurate information repeatedly throughout the paper
- did not integrate ideas
- did not fully or clearly elaborate on the resource material
- displayed weakness in planning which led to incoherent responses that were lacking logical progression
- wrote generally rather than providing specific evidence
- did not provide evidence for all aspects of a question
- did not show clear understanding of evolutionary or ecological concepts
- did not always consider alternative explanations for phenomena e.g. the three colours of pohutakawa
- misinterpreted the resource material e.g. that mammoths would compete with elephants.

OTHER CANDIDATES

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

- lacked depth and breadth in their answers
- did not answer all questions and/or did not answer all aspects of the questions
- had poor knowledge of relevant biological concepts
- answered generally and did not address the question or all aspects of the question
- copied resource material into their answers without processing or elaborating
- provided descriptions and did not elaborate or provide justifications
- lacked language fluency and did not plan answers
- wrote a lot of irrelevant or incorrect or repetitive information
- misinterpreted the questions e.g. wrote about the evolution of the genus *Metrosideros* rather than the two pohutukawas.

OTHER COMMENTS

Question One

- Some candidates wrote on the processes that led to the evolution of the whole **genus** rather than the two pohutukawas. Many candidates wrote large amounts of descriptive detail about the differences between the two species [e.g. 1 – 2 pages] which did not provide additional evidence for natural selection.
- Many candidates wrote on the 'evolution' of the three varieties pohutukawa rather than the **'genetics'** therefore not answering the question
- Many candidates incorrectly used 'interbreeding' when 'inbreeding' was the correct term – this applied to Q3 as well.

Question Two

- Many candidates gave differences and similarities but did **not** relate these to the reasons why the salmon was unsuccessful. Many candidates repeated the information given in the resource material but did not elaborate on it.
- Many candidates wrote generally about migratory behaviour and did not address the aspects that applied to the salmon; many had a very confused idea of what exactly the salmon did in migration from NZ e.g. it went to Europe and back getting lost or running out of energy on the return journey.
- Many candidates brought evolutionary concepts into the question which was irrelevant; many also brought interspecific competition into the evidence given in their answers which was also irrelevant.
- Many candidates think that adult fish protect and even teach their young.

Question Three

- Many candidates 'dumped' information by describing many bio techniques in the hope that they might have been relevant to the question. Many tried to give transgenesis as an answer. Commonly, the evaluation brought in aspects of ecology/adaptations/evolution when the question asked candidates to evaluate the success of the biological technique.
- Many candidates described natural selection acting on the mammoths to turn them into elephants as the evolutionary implication. Ecological implications were far too general in

many cases e.g. ‘the extinction of many/all other species’; ‘wipe out the community’; ‘cause environmental chaos’. Only top candidates gave specific implications e.g. “Herbivore numbers would be reduced as their food source was being eaten by a competitor. This would cause reduction in numbers of carnivores which fed on them.” Justification lacked depth in many cases.