

Scholarship

2009 Assessment Report

Biology

COMMENTARY

Many candidates did not show evidence of effective planning, and many gave answers that were very short and lacked depth. In many cases the bullet points in a question were not addressed equally. Some candidates did not give a discussion, but instead gave lists of information or wrote in general terms.

SCHOLARSHIP WITH OUTSTANDING PERFORMANCE

Candidates who were awarded Scholarship with Outstanding Performance typically:

- wrote a comprehensive answer for each question by integrating information into a discussion
- addressed each bullet point of each question, displaying a depth and breadth of biological information
- used the resource material in their answer and elaborated on it using biological terms correctly to demonstrate clear biological understanding.

SCHOLARSHIP

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

- answered all questions
- answered all parts of the question and wrote on the required topic
- showed planning in their answers, which were well structured
- linked ideas and integrated them comprehensively
- supported their answers with data from the resource material especially from graphs
- showed a good grasp of biological terms and concepts and wrote fluently using these terms and concepts confidently
- identified mutation as the cause of new alleles and therefore the raw material for natural selection
- confidently explained and applied natural selection to the evolution of a named species
- applied the concept of biological niche
- applied the concepts of competitive exclusion and niche differentiation
- explained the consequences of natural selection on allele frequencies in a population
- could go beyond the text to explain the adaptive advantage of changes in phenotype
- discussed biological evolution in terms of alleles, not just phenotypic change
- showed understanding that mutations are random and do not arise simply because the organism has a need for a particular feature
- did not use Lamarkian concepts [such as ‘had to evolve...’ ; ‘had to adapt...’]
- realised that the frequency and selection for lactase persistence is not grounded in modern human behaviour
- showed clear understanding of the processes of autopolyploidy and allopolyploidy in terms of genomes, gametes, and fertility in plants, and supported their answers with fully annotated flow diagrams
- showed understanding of the concept of a fair test in experimental design
- explained why it was important to control specific variables in an experiment
- differentiated between the concepts of validity and reliability and explained why they were important in experimental design.

OTHER CANDIDATES

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

- did not logically or methodically work through each question and identify relevant biological concepts and processes
- wrote answers which were repetitive and rambling
- made little reference to the resource material or used it incorrectly
- quoted large chunks from the resource material with little or no expansion or justification
- did not show good general knowledge e.g. of world geography
- did not clearly identify and / or describe evolutionary processes within the context of a question e.g. founder effect, geographical isolation, mutation, natural selection, available niches
- did not interpret graphs to identify trends and / or provide relevant data
- confused the concepts of niche and habitat
- showed poor understanding of the concept of adaptation
- showed poor understanding of natural selection
- wrongly stated that mutations and / or adaptations occurred and / or developed because they were needed
- did not distinguish between processes and patterns of evolution
- wrongly stated that natural selection over the last one to two hundred years was responsible for the current allele frequencies in human populations
- did not make clear that operons occur only in prokaryotes
- did not distinguish between a gene and an allele
- wrongly stated that a dominant allele became more dominant as it became more common
- displayed poor understanding of the process and consequences of meiosis
- did not correctly apply the processes of sexual and asexual reproduction to banana breeding
- did not identify and / or distinguish between allopolyploidy, autopolyploidy, hybridisation , non-disjunction
- treated the banana genomes A and B as alleles A and B
- did not distinguish between dependent, independent, controlled variables
- did not distinguish between reliability and validity in an experimental situation.