

Assessment Specifications

General information

Domain	Biology
Level	2
Mode of Assessment	Written Examination
For Year	2013 (Updated March 2013)
Standards	91156, 91157, 91159

Format for the assessment

Candidates may be required to interpret diagrams and new information, draw diagrams, and write responses of one or more paragraphs.

Some questions may be resource-based.

Candidates may use annotated diagrams to show evidence where appropriate.

Specific information for individual external achievement standards

Standard	91156
Title	Demonstrate understanding of life processes at the cellular level
Version	1
Number of Credits	4

Special notes

Understanding of the structure of DNA, and the meaning of semi-conservative replication as part of cell division, is expected.

Factors affecting the processes may include the direct availability of resources (e.g. sunlight, water, CO₂ are all needed for photosynthesis) as well as the indirect effect of factors that affect enzyme activity within cells (e.g. temperature, pH, substrate, concentration, co-enzymes, enzyme poisons).

Similarities and differences between cells may relate to the overall functioning of the organism and justifying the reasons for these similarities and differences.

Standard 91157

Title Demonstrate understanding of genetic variation and change

Version 1

Number of Credits 4

Special notes

Mutation as a source of new alleles requires candidates to understand the difference between gametic and somatic mutations.

Candidates may be required to draw and/or interpret a Punnett square for any of the specified monohybrid or dihybrid inheritance patterns, and calculate the expected proportions of genotype and phenotype (expressed as a ratio, fraction, percentage, or decimal).

Understanding of genetic drift is considered to include understanding of founder effect and genetic bottlenecks.

Standard 91159

Title Demonstrate understanding of gene expression

Version 1

Number of Credits 4

Special notes

For nucleic acid structure and the nature of the genetic code, the bases are adenine, thymine, guanine, cytosine, and uracil; the relationship between them should be understood.

Examples such as sickle cell and cystic fibrosis in humans could be used to illustrate gene mutations.