Biology 3201
June 2011 Public Exam Outcome Report

This examination follows the specifications, conventions and standards set out in the:
Biology 3201 Provincial Exam Standards

Units 1 - Maintaining Dynamic Equilibrium 3 - Genetic Continuity
2 - Reproduction and Development 4 - Evolution, Change and Diversity

PART I: Selected Response—Total Value: 75%

Item	Curriculum Guide Page	Outcome	Cognitive Level	Outcome Description
1	28	116-7	L2	Given a diagram of the brain, identify a part of the brain.
2	34	317-2	L2	Identify the parts of the reflex arc given an unseen sample arc.
3	28	116-7	L1	Identify the methods of protecting the nervous system.
4	30	317-1	L2	Demonstrate knowledge of the resting state of a neuron.
5	30	317-2	L1	Given a diagram of a neuron, identify the parts/functions of a labeled section.
6	36	115-5	L1	Identify how a technology works when exploring the human brain.
7	34	317-4	L1	Recall the causes of a specific nervous system disorder.
8	40	317-1	L1	Given a diagram of an eye, identify a specific part.
9	42	317-1	L1	Trace the pathway of sound through the ear.
10	44	314-3	L1	Identify the hormones that relate to the body's response to stress.
11	40	116-4	L2	Describe the causes of myopia and hyperopia.
12	50	317-2	L2	Select the test required to make a diagnosis of diabetes mellitus based on the results of an initial test.
13	44/46	317-1	L2	Demonstrate an understanding of the responsibilities of the various endocrine glands.
14	46	314-3	L1	Recall the gland/hormone responsible for the regulation of metabolic activity.
15	48/68	317-2 313-4	L3	Demonstrate knowledge of the female reproductive hormones/glands and how they are regulated in a negative feedback loop.

16	58	313-2	L2	Given a diagram, recognize the stages of mitosis.
17	58	313-2	L1	Recall the processes that occur in each stage of mitosis.
18	60	313-2	L2	Given a diagram representing chromosomal changes, identify the process occuring.
19	60	317-5	L1	Understand the process of radiation therapy and the effects on cancer cells.
20	62	213-7	L2	Identify reasons why stem cell research may be considered controversial.
21	64	313-3	L1	Make comparisons between a human egg and a human sperm.
22	64	116-7	L2	Provide an example of asexual reproduction.
23	66	313-2	L2	Describe the role of the polar nuclei in plant reproduction.
24	60	313-2	L3	Determine the chromosome arrangement of a cell at the end of meiosis I.
25	68	313-2	L1	Identify where spermatogenesis occurs.
26	68	313-4	L2	Connect changes in inhibin levels to sperm production.
27	70	313-3	L2	Given a diagram, identify the part of the female reproductive system where implantation occurs.
28	70	313-3	L1	Identify a reproductive organ given the features of that organ.
29	72	313-4	L1	Recall the cause/effects of a specific sexually transmitted infection.
30	74	313-6	L1	Select a technological solution to human infertility given a situation specific to an individual.
31	78	313-4	L1	Identify the parts associated with a developing embryo.
32	76	118-4	L1	Identify a specific type of birth control given a statement on how it works.
33	78	313-4	L1	Describe how fraternal and identical twins are conceived.
34	78	313-4	L2	Given a diagram, indicate where the process of cleavage occurs.
35	80	313-4	L1	Identify an endocrine hormone given a function of the hormone.
36	86	315-3	L1	Recall the difference in heterozygous and homozygous genotypes.
37	86	315-3	L1	Identify the contributions made by various scientists in the field of genetics.
38	88	212-4	L2	Interpret patterns and trends in a dihybrid cross.

39	90	214-5	L2	Predict the outcome of a dihybrid cross.
40	92	315-2	L1	Identify the contributions made by various scientists in the field of genetics.
41	88	212-4	L2	Predict the outcome of a monohybrid cross.
42	90	214-5	L2	Understand the concept of a test cross.
43	88/90	214-2	L2	Determine the gametes produced in a dihybrid cross.
44	94	315-1	L1	Identify an example of a polygenic trait.
45	98	314-3	L1	Recall the nucleotides found in RNA.
46	96/98	114-2 314-3	L2	Given the percentage of a nucleotide base, determine the percentage of the others. Apply Chargaff's rule.
47	104	317-4	L1	State the inheritance pattern of a given genetic disorder.
48	96	114-2	L2	Identify the contributions made by various scientists in the field of genetics.
49	98	314-3	L3	Determine the unknown nucleotides in a section of DNA.
50	98	315-5	L1	Describe the various models of DNA replication.
51	98	315-4	L1	Identify the sequence of events that occur during protein synthesis.
52	98	315-4	L1	Describe the events that occur in the process of transcription.
53	102	215-5	L3	Given a diagram representing a karyotype of an individual, describe the symptoms present in the individual.
54	102	315-6	L1	Recall the types of chromosome mutations.
55	104/106	317-4 214-5	L3	Determine the genotype of a person given the genotypes of his/her family relations.
56	106	116-6	L1	Identify the methods of observing the fetus.
57	108	315-9	L2	Analyze gel electrophoresis samples to identify similar samples.
58	98/100	315-7 315-4	L3	Use a codon table to identify a mutation.
59	108	315-10 117-2	L1	Highlight the findings of the Human Genome Project.
60	110	118-2	L1	Categorize a genetically modified organism.
61	112	118-2	L2	Organize the process for cloning an individual.
62	106	214-5	L2	Interpret a given pedigree to determine a person's genotype.
63	112	118-2	L1	Identify a negative environmental impact/threat involved with a genetically modified organism.

64	108	315-9	L1	Identify the purpose of polymerase chain reaction (PCR).
65	118	115-7	L1	Describe the process of evolution.
66	122	114-2	L2	Compare and categorize the structures of two organisms.
67	120	114-5	L1	Identify the contributions of various scientists to the field of evolution.
68	124	212-1	L2	Calculate the age of a fossil using radioactive dating half-life.
69	126	316-3	L2	Given a change to the members of a species, identify the disruption that results in a new population.
70	128	316-3	L1	Distinguish between divergent and convergent evolution.
71	124	116-2	L2	Calculate the percentage of individuals in a Hardy-Weinberg equilibrium that has a particular trait.
72	126	316-3	L1	Identify examples of stabilizing, directional and disruptive selection.
73	128	316-3	L1	Identify the type of isolation preventing the reproduction of two species.
74	130	316-2	L3	Evaluate a given evolutionary tree to determine possible reasons why distinct species evolved at various stages over a continuum.
75	130	316-4	L1	Recall characteristics about the various theories pertaining to the origin of life on Earth.

PART II: Constructed Response—Total Value: 25%

Item	Curriculum Guide Page	Outcome	Cognitive Level	Value	Outcome Description
76a	28, 38	116-7 317-1 314-2	L3	3	Describe parts/functions of the nervous system which may be affected when a person ingests various substances.
76bi	46	314-3	L2	1	Make connections regarding the cyclic pattern involved in the regulation of various hormone levels (high/low levels) over a 24 hour period.
76bii	46	314-3	L2	1	Give reasons why these hormone levels peak at certain times.
77ai	70, 76	313-4	L3	1	Identify an unknown reproductive hormone given a graphical representation of the hormones.
77aii	70, 76	118-4 313-4	L3	1	Describe how the birth control pill affects reproductive hormones.

77b	76	118-6	L3	2	Assess the affects of birth control on the population demographics of undeveloped countries.
77ci	78, 58, 62	116-3 213-7	L2	1	Describe the mechanics of cloning.
77cii	78, 58, 62	116-3 213-7	L2	2	Contrast technologies that were developed based on cell division (stem cell/cloning).
78a	90	214-5	L3	4	Predict the genotypes/phenotypes of individuals involved in a dihybrid cross.
78b	100	315-4	L2	2	Discuss the influence of hormonal and environmental factors on gene expression.
78ci	113	118-6	L2	2	Support a decision concerning applied genetics research in NL.
78cii	113	118-2 315-10	L2	1	Compare/contrast the Human Genome Project and Newfound Genomics.
79a	124	116-2 316-3	L2	2	Given a set of conditions, explain why a population is or is not in Hardy-Weinberg equilibrium.
79b	122	114-2	L3	2	Compare the evolutionary relationship between two organisms using two comparative categories.