

# Biology 3201

## June 2012 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	(Unit 1) 28	116-7	L2	Given a diagram, identify a part of the brain.
2	28	116-7	L1	Identify methods of protecting the nervous system.
3	28	116-7	L2	Identify the functions of the sympathetic/parasympathetic nervous systems.
4	30	317-1	L1	Recall the functions of the transporters/channels found in the axon of a neuron.
5	30	317-2	L1	Identify the parts/functions of a neuron.
6	32	317-2	L1	Given an unseen diagram, identify the order of events in a reflex arc.
7	32	317-1	L2	Distinguish between an inhibitory and an excitatory response when given an unseen example.
8	34,38	317-4	L1	Recall the symptoms of a specific nervous system disorder.
9	40	317-1	L2	Given a diagram, identify the parts/functions of the eye.
10	46	314-3	L1	Identify the hormones that relate to the body's response to stress.
11	34	317-4	L1	Recall the causes of a specific nervous system disorder.
12	48/50	317-4	L2	Identify the symptoms of a specific endocrine system disorder.
13	44,46	317-1 314-3	L2	Demonstrate an understanding of the responsibilities of the various endocrine glands.
14	48	317-4	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.

16	(Unit 2) 58	313-2	L2	Given a diagram, identify the stages of mitosis.
17	58	313-2	L1	Recall the events that occur during the stages of mitosis/meiosis.
18	60	313-2	L2	Given a diagram representing chromosomal changes, identify the processes occurring.
19	60,62	116-3 213-7	L1	Recall the methods of treating cancer.
20	60,62	313-3	L1	Compare the processes of spermatogenesis and oogenesis.
21	62	116-3 213-7	L2	Given a diagram of embryo development, identify where stem cells could be harvested.
22	64	116-7	L1	Recall examples of asexual reproduction.
23	66	313-2	L1	Demonstrate an understanding of sexual reproduction in flowers.
24	68	313-3	L2	Given a diagram, identify the parts/functions of the male reproduction system.
25	70	313-4	L2	Given a diagram, identify which part of the female reproductive system is affected by a specific hormone.
26	70	313-4	L3	Interpret trends in a graph of the female reproductive hormones that occur throughout the menstrual cycle.
27	72	313-4	L2	Identify the cause/treatment of an identified sexually transmitted infection.
28	70	313-3	L1	Identify the function/part of the female reproductive system given specific features of that part.
29	74	313-5 313-6	L2	Compare the processes of <i>in vitro</i> fertilization (IVF) and <i>in vitro</i> maturation (IVM).
30	74	313-5 313-6	L2	Given symptoms, determine the cause of a couple's infertility.
31	78	313-4	L1	Recall the functions of the primary membranes.
32	76	118-4	L1	Given a characteristic about a birth control method, identify the method.
33	78	313-4	L1	Provide the correct pathway a sperm must travel to successfully fertilize an egg.
34	78	313-4	L1	Recall when implantation occurs.
35	80	313-4	L1	Recall the function of a given reproductive hormone.
36	(Unit 3) 86	315-3	L1	Recall the difference between the heterozygous and homozygous genotypes.
37	86	315-3	L2	Given an unknown example, describe which of Mendel's laws is illustrated.
38	88	315-3	L2	Interpret patterns and trends in a monohybrid cross.
39	90	214-5	L1	Recall the function of a test cross.

40	90	214-5	L1	Interpret patterns and trends in a monohybrid cross that relates to co-dominance and incomplete dominance.
41	88	212-4	L2	Interpret patterns and trends in a monohybrid cross.
42	90	214-5	L2	Perform a monohybrid cross involving multiple alleles/blood types.
43	88	212-4	L1	Determine the gametes for a dihybrid cross.
44	92	315-2	L1	Identify the contributions made by various scientists in the field of genetics.
45	98	314-3	L1	Identify 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	92	315-2	L1	Recall the chromosome theory of inheritance.
48	94,104	315-1 317-4 315-8	L2	Identify and interpret the inheritance patterns associated with sex-linked traits.
49	98	314-3	L3	Determine the unknown nucleotides in a section of DNA.
50	94	214-5	L3	Use the product rule/monohybrid cross to predict the genotype of a child given an example of an unseen sex-linked trait.
51	98	315-4	L1	Recall the events that occur throughout protein synthesis.
52	96	115-3	L1	Recall the components of a DNA nucleotide.
53	96	115-3	L1	Identify the contributions made by various scientists in the field of genetics.
54	98	315-4	L3	Use a codon table to identify a DNA strand given an unknown amino acid sequence.
55	100	315-7	L2	Given a strand of mutated DNA, determine the mutation that occurred.
56	100	315-4	L2	Identify an example of gene expression brought on by environmental factors.
57	102	315-4	L3	Given a karyotype, identify a specific genetic syndrome.
58	104	317-4 315-8	L2	Identify and interpret inheritance patterns given an unseen genetic condition.
59	108	315-10 117-2	L1	Recall the purpose of the Human Genome Project.
60	110	118-2	L1	Identify an example of a genetically modified organism.
61	108	315-9	L2	Demonstrate an understanding of the processes involved to produce a DNA fingerprint.
62	106	214-5	L2	Interpret inheritance patterns illustrated in a pedigree.
63	112	118-6	L1	Recall some risks associated with cloning organisms.
64	108	315-9	L1	Recall the steps/processes involved in genetic engineering.

65	(Unit 4) 118	316-3	L1	Recall how industrial melanism affected the pepper moth population in England.
66	120	114-5	L1	Identify the contributions of various scientists in the field of evolution.
67	122	114-2	L1	Recall the purpose of comparing homologous structures.
68	124	212-1	L2	Calculate the age of a fossil using radioactive dating half-life.
69	126	316-3	L2	Identify examples of founder effect given an unseen example.
70	128	316-3	L1	Recall how divergent evolution occurs.
71	122	114-2	L2	Compare the structures of two organisms to determine if they are analogous or homologous.
72	124	212-1	L3	Calculate the percentage of individuals in Hardy – Weinberg equilibrium that has a particular trait.
73	128	316-3	L1	Identify the type of isolation preventing the reproduction of two species.
74	126	316-3	L2	Identify examples of stabilizing, directional, and disruptive selection.
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(i)	42	317-1	L2	1	Describe the parts/functions of the ear which may be affected during exposure to a set of unseen circumstances.
76a(ii)	42	317-1	L2	1	Support or refute a decision regarding regulations of sound volume levels in Newfoundland and Labrador.
76b(i)	44	317-1	L3	1	Given an elevation in a hormone level, describe the effects on the body systems.
76b(ii)	44	317-1	L3	2	Given an endocrine system disorder, provide two possible treatments.
77a	58	313-2	L3	2	Make connections regarding the processes involved in a cell division phase with how they affect the remainder of the cell cycle.
77b(i)	80	116-2	L2	1	Given a specific medical condition, determine methods which may be used to monitor a developing embryo.
77b(ii)	78	313-4	L3	2	Given a specific symptom set, determine the possible outcome/medical conditions that may occur to a developing embryo.
77c	62	116-3 213-7	L2	2	Identify the risks/benefits with using adult stem cells for research.
78a(i)	88,94	212-4 315-1	L3	3	Identify and interpret inheritance patterns using a dihybrid cross.
78a(ii)	88,94	212-4 315-1	L3	2	Interpret the results of a dihybrid cross in order to determine the phenotypes of the parents.
78b(i)	108	315-9	L2	2	Describe/Interpret the processes involved in genetic engineering.
78b(ii)	112	118-6 118-2	L2	1	Compare/Contrast the benefits/risks associated with genetic engineering.
78b(iii)	112	118-6 118-2	L3	1	Support or refute the usage of genetically modified organisms.
79a	120	114-2	L3	2	Describe the process of natural selection as it pertains to an unseen population.
79b	128	316-3	L2	2	Identify specific examples of prezygotic and postzygotic barriers.