Biology 3201
June 2018 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	L1	Identify a part of the brain when given a diagram and the function of the part.
2	28	116-7	L2	Identify the functions of the autonomic nervous systems.
3	30	317-1	L1	Recall the order of events in an action potential.
4	30, 34	317-1 317-4	L2	Given the diagram of a neuron, identify which part is affected by a specified disorder.
5	36	115-5	L1	Identify which technology performs a specific function.
6	32	317-1	L2	Given a specific situation, determine the type of neural response.
7	32	317-2	L1	Recall the order of events in a reflex arc.
8	38	317-4 317-7	L2	Identify the connection between a decrease in a neurotransmitter and disease.
9	40	116-4	L1	Identify an eye disorder given the cause.
10	46	314-3	L1	Identify the events that occur in the body during times of stress.
11	42	317-1	L1	Identify the part of the ear that performs a specific function.
12	44	317-1	L3	Demonstrate an understanding of the negative feedback loop.
13	46	314-3	L2	Demonstrate an understanding of endocrine hormones when given test results.
14	48, 50	317-4	L2	Identify a specific endocrine system disorder when given its symptoms.
15	48	317-2	L1	Recall the hormones involved in a positive feedback loop.
16	(Unit 2) 58	313-2	L2	Identify a stage of mitosis when given a diagram of a particular stage.
17	58	313-2	L1	Recall the events that occur during the stages of mitosis/meiosis.
18	60	313-2	L2	Identify chromosome changes that occur during meiosis.
19	60	313-2	L1	Recall the events that occur during the stages of mitosis/meiosis.

Item	Curriculum Guide Page	Outcome	Cognitive Level	Outcome Description
20	62	116-3 213-7	L2	Demonstrate an understanding of the role of neurotransmitters and disease.
21	66	313-2	L2	Demonstrate an understanding of the parts of a flower.
22	68	313-3	L2	Demonstrate an understanding of the structure and function of a specified part of the male reproductive system.
23	64	116-7	L1	Identify the type of asexual reproduction for a specific organism.
24	68	313-3	L1	Identify the role of a specific part of the male reproductive system.
25	70	313-3	L1	Identify the role of a specific part of the female reproductive system.
26	70	313-4	L2	Demonstrate an understanding of the hormones that play a role in each stage of the menstrual cycle.
27	70, 72	313-4	L1	Identify a hormone involved in the menstrual cycle given its function.
28	72	313-4	L1	Recall the potential health risk(s) for a specific STI.
29	74	313-5 313-6	L2	Recall characteristics of reproductive technologies.
30	74	313-5 313-6	L2	Given a specific situation, identify the cause of human infertility.
31	78	313-4	L1	Recall the functions of primary membranes during embryonic development.
32	76	118-4	L1	Identify which birth control technology matches given characteristics.
33	78,80	313-4	L3	Demonstrate an understanding of the functions of the primary membranes during embryonic development.
34	80	116-2	L1	Identify the technique used to monitor various stages of embryonic development.
35	80	313-4	L1	Identify an agent which causes birth defects.
36	(Unit 3) 86	315-3	L1	Recall the genotypes used in a test cross.
37	86	315-3	L1	Recall the terminology for the physical appearance of an individual.
38	88	315-3	L2	Identify the correct inheritance pattern for a given example.
39	88	212-4	L2	Perform a monohybrid cross.
40	98	315-5	L1	Describe the various models of DNA replication.
41	88	212-4	L2	Interpret patterns and trends in a single trait cross.
42	90	214-5	L2	Predict the outcome of a monohybrid or dihybrid cross
43	94	315-1	L1	Recall traits that demonstrate polygenetic inheritance.
44	94	315-1 214-5	L3	Perform a monohybrid cross on a sex-linked trait.

Item	Curriculum Guide Page	Outcome	Cognitive Level	Outcome Description
45	96	114-2	L3	Apply Chargaff's rule to an unseen example.
46	92	315-2	L1	Identify the role of chromosomes in the transmission of hereditary information.
47	98	314-3	L1	Given a diagram, identify the indicated component of a DNA/RNA molecule.
48	100	315-7	L2	Identify which types of mutations would most likely affect successive generations.
49	98	315-4	L2	Demonstrate an understanding of the various forms of RNA.
50	98	315-5	L1	Recall the purpose of the enzymes/molecules involved in DNA replication.
51	102	315-6	L2	Distinguish between different types of chromosome mutations.
52	96	115-3	L1	Identify the contributions made by various scientists in the field of genetics.
53	102	317-4	L1	Given a diagram, determine the appropriate pairing of sex chromosomes.
54	98	315-4	L3	Use a codon table to identify a DNA/amino acid sequence.
55	100	315-7	L2	Identify a mutation type given an unseen example.
56	104	315-8 317-4	L1	Identify a genetic disorder when given its characteristics/inheritance pattern.
57	102	315-4	L3	Determine a chromosome mutation when given a karyotype.
58	106	116-6	L1	Identify a specific method used to detect a genetic disorder.
59	108	315-9	L1	Demonstrate an understanding of DNA amplification.
60	108	315-10 117-2	L1	Recall the findings of the Human Genome Project.
61	108	315-9	L2	Recall a DNA fingerprint is constructed.
62	106	214-5	L2	Identify the pattern of inheritance from a pedigree.
63	110	118-2	L1	Identify an example of a GMO/GMF.
64	112	118-2	L1	Recall how cloning organisms affects variability.
65	(Unit 4) 118	316-3	L1	Recall the effects of industrialization on the pepper moth population.
66	120	114-5	L1	Identify the contributions of various scientists in the field of evolution.
67	122	114-2	L1	Identify the significance of particular evidences for the theory of evolution.
68	122	114-2	L2	Identify examples of evidence supporting the theory of evolution.
69	120	114-2	L1	Identify the contributions of various scientists in the field of evolution.
70	124	212-1	L2	Calculate the age of a fossil given the half-life and the fraction remaining.
71	126	316-3	L2	Demonstrate an understanding of mutations as it relates to evolution.
72	124	116-2	L2	Calculate the percentage of individuals in Hardy-Weinberg equilibrium who have a certain trait.
73	128	316-3	L1	Given an example, determine the type of behavioral barrier that is occurring.

Item	Curriculum Guide Page	Outcome	Cognitive Level	Outcome Description
74	128	316-3	L3	Demonstrate an understanding of speciation.
75	130	316-4	L1	Identify an example of a theory 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	30	317-1	L2	2	Explain the role of the ion channels at different stages of the action potential.
76b	44, 46	314-3 317-1 116-7	L3	3	Explain how both the endocrine system and the nervous system play a role in homeostasis.
77a	60	313-3	L2	2	Demonstrate an understanding of the processes of gamete production in humans.
77b(i)	62	116-3 213-7	L2	1	Discuss the effectiveness of a particular type of cancer treatment for a specific type of cancer.
77b(ii)	62	116-3 213-7	L3	2	Identify and describe a technological solution to human infertility resulting from the treatment in part (i).
77c	70, 72	313-4 214-18	L3	2	Explain the impact that raising/lowering a female reproductive hormone has on her reproductive system.
78a(i)	88, 90	212-4 214-5	L3	1	Identify the genotypes of the parents from information given for a dihybrid cross
78a(ii)	88, 90	212-4 214-5	L3	2	Interpret the data obtained from a dihybrid cross.
78b	108	315-10 117-2	L2	2	Discuss the risks/benefits of knowledge gained through the Human Genome Project.
78c	108	315-9	L2	2	Interpret information provided in a series of gel electrophoresis patterns.
78d(i)	110, 112	118-2 118-6	L2	1	Describe a benefit of a particular GMO.
78d(ii)	110, 112	118-2 118-6	L3	1	Identify and explain the major risks/benefits associated with a particular GMO.
79a	124	116-2	L2	2	Explain why a given population may or may not be in Hardy Weinberg equilibrium.
79b	126	316-3	L3	2	Demonstrate an understanding of the process of natural selection and the factors that influence the rate of natural selection.