Biology 3201 June 2015 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 methods of protecting our central nervous system.	
2	28	116-7	L2	Identify the functions of the autonomic nervous systems.	
3	28	116-7	L2	Identify a part of the brain given its function and a diagram.	
4	30	317-1	L1	Recall the role/passage of ions found in the axon of a neuron during nerve transmission.	
5	30	317-2	L1	Identify a specific part of a neuron given its function.	
6	32	317-1	L2	Determine the type of neural response given a specific situation.	
7	32	317-2	L1	Recall the order of events in a reflex arc.	
8	34	317-4	L1	Identify a specific nervous system disorder given its cause.	
9	34,38	317-4	L1	Recall the symptoms of a specific nervous system disorder.	
10	46	314-3	L1	Identify the events that occur in the body during times of stress.	
11	40	317-1	L2	Identify a specific eye part when given its function.	
12	48	317-4	L1	Identify a disease of the endocrine system given a description of hormone production.	
13	44,46	317-1 314-3	L2	Demonstrate an understanding of the functions of the various endocrine glands.	
14	48/50	317-4	L2	Identify a specific endocrine system disorder when given its symptoms.	
15	48,68	317-2 313-4	L3	Demonstrate knowledge of the roles/functions of the female reproductive system.	

16	(Unit 2) 58	313-2	L2	Identify the stages of mitosis given a diagram of a specific stage.			
17	58	313-2	L1	Recall the events that occur during the stages of mitosis/meiosis.			
18	60	313-2	L2	Identify chromosomal changes that occur during synapses.			
19	60,62	313-3	L1	Identify similarities/differences in production of female/male gametes.			
20	60,62	116-3 213-7	L1	Recall effects of specific cancer treatment approaches.			
21	62	116-3 213-7	L2	Recall the processes involved in stem cell collection.			
22	66	313-2	L1	Demonstrate an understanding of sexual reproduction in flowers.			
23	64	116-7	L1	Identify the various types of asexual reproduction.			
24	68	313-3	L2	Recall the parts/functions of the male reproduction system.			
25	70	313-3	L1	Recall the parts/functions of the female reproduction system.			
26	70	313-4	L2	Identify the effect hormones have on the female reproductive system.			
27	70	313-4	L3	Interpret trends in female reproductive hormones.			
28	72	313-4	L2	Identify the cause/treatment of an identified sexually transmitted infection.			
29	74	313-5 313-6	L2	Recall characteristics of reproductive technologies.			
30	74	313-5 313-6	L2	Identify characteristics/examples of causes of infertility.			
31	78	313-4	L1	Recall the functions of the primary membranes.			
32	76	118-4	L1	Recall characteristics about various birth control methods.			
33	78	313-4	L1	Recall the timeline/processes associated with implantation.			
34	78	313-4	L1	Identify the correct pathway a sperm must travel to successfully fertilize an egg.			
35	80	313-4	L1	Identify a reproductive hormone when given the function.			
36	(Unit 3) 86	315-3	L1	Distinguish between heterozygous and homozygous genotypes.			
37	86	315-3	L2	Identify an example of Mendel's laws.			
38	88	212-4	L1	Determine the alleles produced for a given dihybrid cross.			
39	88	315-3	L2	Demonstrate an understanding of various inheritance patterns.			
40	90	214-5	L1	Recall the genotypes used in a test cross.			
41	88	212-4	L2	Interpret patterns and trends in a single trait cross.			

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42	90	214-5	L2	Determine inheritance patterns for multiple alleles.			
43	90	214-5	L1	Interpret patterns and trends in a monohybrid 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 DNA/RNA.			
46	92	315-2	L1	Identify the role chromosomes play in gene inheritance.			
47	94	214-5	L3	Interpret patterns involving single trait crosses of sex-linked traits.			
	94,104	315-1		Identify and interpret the inheritance patterns associated with sex-linked traits.			
48		317-4	L2				
		315-8					
49	98	314-3	L3	Determine the correct nucleotide pairing in a section of DNA.			
50	96	115-3	L1	Recall the components of a DNA/RNA nucleotide.			
51	98	315-4	L1	Recall the events that occur throughout transcription/translation.			
52	96	115-3	L1	Identify the contributions made by various scientists in the field of genetics.			
52	96,98	114-2	1.2	Apply Chargaff's rule to an unseen example.			
55		314-3	LZ				
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	100	315-4	L2	Identify an example of how environmental factors affect gene expression.			
57	102	315-4	L3	Interpret a karyotype to identify a specific genetic syndrome.			
БO	104	317-4	L2	Identify characteristics/inheritance patterns of a specific genetic disorder.			
50		315-8					
59	108	315-9	L1	Recall the steps/processes involved in DNA amplification.			
60	108	315-10	L1	Recall the findings of the Human Genome Project.			
		117-2					
61	108	315-9	L2	Recall how to construct a DNA fingerprint.			
62	106	214-5	L2	Interpret inheritance patterns illustrated in a pedigree.			
63	110	118-2	L1	Identify an example of a genetically modified food/organism.			
64	112	118-6	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	126	316-3	L2	Identify factors which can disrupt the Hardy-Weinberg equilibrium.		
70	124	212-1	L2	Demonstrate knowledge of half-life calculations.		
71	126	316-3	L2	Given an example, determine the type of natural selection which is occurring.		
72	124	212-1	L3	Correctly use the Hardy–Weinberg equilibrium equations to determine the frequency of a particular trait/group of individuals.		
73	128	316-3	L1	Recall the difference between convergent and divergent evolution.		
74	128	316-3	L1	Identify an example of a prezygotic/postzygotic barrier.		
75	130	316-4	L1	Identify an example of a theory pertaining to the origin of life on Earth.		

Item	Curriculum Guide Page	Outcome	Cognitive Level	Value	Outcome Description
76a(i)	42	317-1	L2	1	Identify the parts/functions of the ear that may be damaged through exposure to prolonged high decibel sounds.
76a(ii)	42	317-1	L2	1	Support or refute a decision regarding regulations of sound volume levels.
76b(i)	44	317-1	L3	1	Describe the effect that a tumor would have on a specific endocrine gland/negative feedback mechanism.
76b(ii)	44	317-1	L3	2	Provide two possible treatments for a specific endocrine system disorder.
77a	62	116-3 213-7	L2	2	Identify the pros/cons of using adult stem cells and/or embryonic stem cells for research.
77b	58	313-2	L3	2	Demonstrate an understanding of the processes involved in cell mitosis/cell cycle.
77c(i)	80	116-2	L2	1	Determine the method which should be used to monitor/diagnose a developing embryonic condition.
77c(ii)	78	313-4	L3	2	Given a specific symptom set, determine the possible outcome/medical conditions that may occur to a developing embryo.
78a(i)	108	315-9	L2	2	Demonstrate an understanding of genetic engineering.
78a(ii)	112	118-6 118-2	L2	1	Identify the pros/cons of creating genetically modified organisms/foods.
78a(iii)	112	118-6 118-2	L3	1	Support or refute the usage of genetically modified organisms/foods.
78b(i)	88,94	212-4 315-1	L3	3	Conduct and interpret inheritance patterns using a two trait cross to determine the genotypic/phenotypic ratios.
78b(ii)	88,94	212-4 315-1	L3	2	Determine the unknown phenotypes/genotypes of the parent generation given the results of a dihybrid cross.
79a	128	316-3	L2	2	Describe examples of barriers that prevent two distinct species from becoming one species.
79b	120	114-2	L3	2	Demonstrate an understanding of the theory of Natural Selection.

PART II: Constructed Response-Total Value: 25%