Course Title: Genetics Honors (edited Nov 2015)
Course Number: 2000440

NGSSS Benchmark	Content Focus	Number of Questions	Suggested Cognitive Complexity *(per CPALMS)*
Reporting Category 1: Molecular and Cellular			
SC.912.L.16.14	Role of mitosis in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction.	1	1 level ~~1~~ 2
SC.912.L.16.16	Process of meiosis, independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores.	2	~~1 level 1~~ 2 level 2
SC.912.L.16.17	Comparing mitosis and meiosis; Meiosis I and II- prophase; Role of meiosis- sexual reproduction	2	~~1 level 1~~ ~~2~~ level 2
SC.912.L.16.3	DNA replication/Gene mutation/genetic codes similarities	2	1 level 1 1 level 2
SC.912.L.16.5	Explain the basic processes of transcription, translation, result in the expression of genes.	4	2 level 2 2 level 3
SC.912.L.16.6	Mechanisms for regulation of gene expression in eukaryotes at transcription and translation level.	3	3 level 2
SC.912.L.18.1	Primary functions of proteins and molecular structure	2	1 level 1 1level 2
SC.912.N.1.2	Describe and explain what characterizes science and its methods.	1	1 level 1
SC.912.N.2.2	Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion.	1	1 level 2
Reporting Category Total		18	
Reporting Category 2: Heredity, Population Genetics, and Evolution			
SC.912.L.15.12	Use the Hardy-Weinberg equation to predict genotypes in a population from observed phenotypes.	3	3 Level 2 ~~2 Level 3~~
SC.912.L.15.14	Genetic drift: Inherited variations	2	1 Level 1 1 level 2
SC.912.L.16.2	Analyzing patterns of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles	5	1 level 1 4 level 2 ~~1 level 3~~
SC.912.L.16.1	Analyze, predict patterns of inheritance Probability problems, Punnett Sqs., pedigrees	5	2 level 1 3 level 2
~~SC.912.N.1.1~~	~~Designing scientific investigations~~	~~3~~	~~3 level 2~~
Reporting Category Total		15	
Reporting Category 3: Biotechnology			
SC.912.L.16.10	Impact of biotechnology- society; including medical and ethical issues.	5	5 level 2
SC.912.L.16.11	Technologies associated with forensic medicine and DNA identification, including (RFLP) analysis.	~~3~~ 1	1 level 2 ~~1 level 3~~
SC.912.L.16.12	DNA technology (restriction enzyme, electrophoresis, PCR, ligation, and transformation) is used to construct recombinant DNA molecules (DNA cloning).	4	3 level 2 1 level 3
SC.912.L.16.7	Bacteria transfer genetic material between cells and the role of this process in biotechnology.	4	4 level 2

SC.912.L.16.8	Relationship between mutation, cell cycle, and uncontrolled cell growth/resulting in cancer.	3	3 level 2
~~SC.912.N.1.1~~	~~Designing scientific investigations~~	~~3~~	~~3 level 2~~
Reporting Category Total		17	

Overall Percentage for Written Test:_____100%_____
Overall Percentage for Performance Task: _____0%____