Course Title: Biology Technology (edits)
Course Number: 2000430

NGSSS Benchmark	Content Focus	Number of Questions	Suggested Cognitive Complexity *(per CPALMS)*
Reporting Category 1: Molecular and Cellular Biology			
SC.912.L14.2	Relate Structure and function for plants and animal cells	3	1 Level 1 2 Level 2 ~~1 Level 3~~
SC.912.L.14.3	Compare general structures of plants and animals and prokaryotes and eukaryotes	3	1 Level 1 2 Level 2 ~~1 Level 3~~
SC.912.L.14.4	Compare and contrast structure and function of microscopes	1	1 Level 2
SC.912.L.18.1	Describe basic molecular structure and function of the four macromolecules	2	1 Level 1 1 Level 2
SC.912.L.18.10	Connect the role of ATP to energy transfer in a cell	1	1 Level 2
SC.912.L.18.11	Explain the role of enzymes as catalysts that lower the activation energy including pH and temperature and their effect on enzyme activity.	2	1 Level 1 1 Level 2
SC.912.L.16.14	Describe the cell cycle, including the process of mitosis.	2	2 level 2 ~~1 level 3~~
SC.912.L.16.16	Describe the process of meiosis, including independent assortmenet and crossing over.	2	2 level 2 ~~1 Level 3~~
SC.912.L.16.17	Compare and contrast mitosis and meiosis;asexual and sexual reproduction	2	1 Level 1 1 Level 2
Reporting Category Total		18	
Reporting Category 2: Classification, Heredity, and Evolution			
SC.912.L.16.10	Evaluate the impact of biotechnology on the individual, society and the enviornemnt.	1	1 Level 2
SC.912.L.16.12	Describe how basic DNA technology is used to construct recombinant DNA molecules.	1	1 Level 3
SC.912.L.16.2	Dominant, recessive, co-dominant, sexu linked, polygenic and multiple alleles.	2	1 level 1 1 level 2
SC.912.L.16.3	DNA Replicaiton	2	2 Level 2 ~~1 Level 3~~
SC.912.L.16.4	Mutations in DNA and phenotypic change.	1	1 Level 2
SC.912.L.16.5	DNA transcription and translation	2	1 Level 2 1 Level 3
SC.912.L.16.6	Regulation of gene expression in prokaryotes and eukaryotes	3	2 Level 1 1 Level 2
SC.912.L.16.7	Describe how viruses and bacteria transfer genetic material between cells and the role of this process in biotechnology.	1	1 Level 2
SC.912.L.16.9	Explain how and why the genetic code is universal and common to all organisms.	1	1 Level 2
SC.912.L.15.1	Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change.	1	1 level 2

SC.912.L.15.13	Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success.	1	1 Level 3
SC.912.L.15.14	Discuss mechanisms of evolutionary change other than natural selection such as genetic drift and gene flow.	1	1 Level 1
SC.912.L.15.15	Describe how mutation and genetic recombination increase genetic variation.	1	1 Level 1
SC.912.L.15.4	Describe how and why organisms are hierarchically classified and based on evolutionary relationships.	1	1 Level 2
SC.912.L.15.8	Describe the scientific explanations of the origin of life on Earth.	1	1 Level 1
Reporting Category Total		20	
Reporting Category 3: Organisms, Populations and Ecosystems			
SC.912.L.17.11	Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.	1	1 Level 2
SC.912.L.17.20	Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.	1	1 Level 2
SC.912.L.17.4	Describe changes in ecosystems resulting from seasonal variations, climate change and succession.	1	1 Level 1
SC.912.L.17.5	Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.	1	1 Level 2
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.	1	1 Level 3
SC.912.L.17.9	Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.	1	1 Level 3
SC.912.L.14.52	Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.	1	1 Level2
SC.912.L. 18.6	Discuss the role of anaerobic respiration in living things and in human society.	1	1 Level2
SC.912.L.18.7	Identify the reactants, products, and basic functions of photosynthesis.	1	1 Level 2
SC.912.L.18.8	Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.	2	1 Level 1 1 Level 2
SC.912.L.18.9	Explain the interrelated nature of photosynthesis and cellular respiration.	1	1 Level 1
Reporting Category Total		12	

Overall Percentage for Written Test:_____100%_____
Overall Percentage for Performance Tasks:____0%_____