

## **Exam Title: Intensive Science**

### **Courses Assessed by this Exam: Intensive Science (2000300)**

**Key Vocabulary:** solar flares, magnetometer, intensity, scientific method, conclusion, hypothesis, scientific investigation, dependent variable, inclined plane, thermocline, shallow mixed layer, deep mixed layer, seismologists, earthquakes, controlled experiment, reliable, scientific theory, evidence, malfunctioning, controlled, inconsistencies, environmentalists, Gulf of Mexico, petroleum pollutants, mutations, algae, biodiesel/ biofuel, green energies, conservation, scientific law, observed phenomena, population, species, habitats, population dynamics, birth rates, death rates, offspring, bushels, clumped distribution, random distribution, uniform distribution, diatoms, phytoplankton, photic zone, aphotic zone, carbon dioxide, aquatic, density, salinity, temperature, primary succession, sink hole, tsunami, erosion, carrying capacity, predator, prey, abiotic, biotic, pH, estuary, Global warming, food chain, food web, carnivore, decomposer, herbivore, producer, filter feeder, carbon cycle, denitrification, photosynthesis, cellular respiration, evaporation, precipitation, surface runoff, transpiration, decomposition, excretion, crustacean, sustainable, native plants, Persian Gulf, nonrenewable resource, greenhouse gases, renewable energy, clear cutting, deforestation, selective cutting, shelterwood cutting, invertebrates, famine, drought, biomass, biodiversity, rural areas, fossil fuels, life-sustaining, polarity, ionic bonds, air bladder, buoyancy, surface tension, smog, asthma, flouricide, cancer, fungicide, constant,

#### **Student Tasks:**

- Be familiar with the proper steps in the scientific method
- Know the difference between the dependent and independent variables in an experiment.
- Be able to model a thermocline
- Be able to identify appropriate constants within a scientific experiment
- Define and identify characteristics of controlled experiments when given various scenarios
- Be able to differentiate between a scientific theory and a scientific law
- Be able to explain variability that occurs in different trials of a scientific experiment
- Be able to justify a hypothesis with plausible evidence
- Identify and be able to use credible sources for scientific research
- Understand the importance of repetition of scientific experiments
- Define the term population and its characteristics
- Identify characteristics of population dynamics
- Identify the factors that affect carrying capacity
- Be able to identify a population's carrying capacity if given a graph
- Identify and explain various population distribution patterns

- Be familiar with the photic zone and the essential factors within it that help support life
- Understand the various factors that affect the density of seawater
- Define and provide examples of primary succession
- Differentiate between biotic and abiotic factors and give examples of each
- Be able to understand the components of a food chain/food web and identify how different organisms are classified within one
- Be able to identify possible effects at various trophic levels when there are changes in food sources or predation
- Understand how plants contribute to the Carbon Cycle
- Understand how animals contribute to the Carbon Cycle
- Understand the water cycle and the different processes involved in it
- Identify the various properties of water and how it supports life
- Know the process of photosynthesis including its reactants and products
- Identify the key characteristics of a sustainable garden
- Understand the major concerns regarding the use and extraction of renewable and nonrenewable resources
- Identify various methods of sustainable forestry
- Identify the possible negative effects of global warming
- Identify the negative effects on human health that can be related to an individual's environment