Exam Title: Agriculture Foundations
Courses Assessed by this Exam: Agriculture Foundations (8106810) Edited December 2016

Key Vocabulary: tissue, regenerate, cell theory, eukaryotic, prokaryotic, organelles, conjugation, replication, transcription, transduction, mitosis, meiosis, asexual reproduction, sexual reproduction, genetic diversity, daughter cells, cross over, chromosome, Prophase I, cell-cycle, macromolecules, amino acids, carbohydrates, lipids, nucleic acids, photosynthesis, zoologist, multicellular, chloroplasts, fungi, decomposers, prokaryotes, Plantae, inherited variation, polar, boiling point, immune system, vaccination, antibiotics, recombinant DNA, recombinant DNA, agrarian society, carcinogenic, independent variable, dependent variable, moldboard steel plow, antidote, flash point, extinguishing media, accidental release measures, biohazard, chloroplast, mitochondria, nucleus, vacuole, endoplasmic reticulum, ell wall, centrioles, cytoplasm, hypothesis, respiration, sucrose, transpiration, glucose, microelement, macro element, propagate, cuttings, grafting, IPM, aphids, fungicide, insecticide, genus, Ayrshire cattle, Charolaise cattle, Guernsey cattle, Holstein cattle, animal welfare, ecosystem, salinity, Animalia, Protista, Archaea, Bacteria, Fungi, industrialized society, area, perimeter, volume,

Student Tasks:

- Identify key differences between eukaryotic and prokaryotic cells
- Understand key differences between mitosis and meiosis.
- Know what specific events contribute to genetic diversity.
- Be familiar with the process of photosynthesis including the reactants and products
- Understand why water is the universal solvent
- Understand the characteristics of each Kingdom
- Be familiar with Archaebacteria, the conditions in which they live, and how they conditions supported early life.
- Identify examples of inherited variation as it relates to natural selection
- Understand the relationship between vaccination, antibiotics, and the immune system.
- Be familiar with some of the negative effects caused by both agrarian and industrialized societies
- Be familiar with examples of valid scientific experiments
- Understand the difference between a dependent and independent variable
- Understand the history of the moldboard steel plow
- Be familiar with the average output of the average American farmer

- Be able to read and understand a chemical MSDS (Materials Safety Data Sheet)
- Know proper disposal techniques of various materials within a lab setting
- Understand the functions and characteristics of organelles unique to plant cells
- Know the steps of the scientific method
- Be able to infer possible outcomes of the photosynthetic process as the environmental conditions change.
- Understand the relationship between photosynthesis and cell respiration including specific reactants and products.
- Be familiar with key microelements in plant nutrition.
- Be able to differentiate between examples of micronutrients and macronutrients.
- Be familiar with the different methods of propagation in plants and their key differences.
- Know what IPM represents
- Be able to identify the proper way to apply a pesticide and provide examples as it relates to aphids.
- Be familiar with binomial nomenclature and examples of common agricultural animals.
- Know the various breeds of cattle and their key uses in agriculture
- Be able to define animal welfare.
- Understand the key uses of the garden hoe, the garden rake, the shovel, and the thatch rake as they relate to land cultivation.
- Be familiar with the different types of hammers and their key functions/uses.
- Be able to calculate the area of a pasture given base and height.
- Be able to plan for a crop purchase when given acreage of land, specific row spacing, percentage of land being used, and desired outcome per acre.