Ecology Quiz 1 Study Guide

What is Ecology?
The root of the word and comparison with Economics
Levels of organization/scale in Ecology
What makes Ecology different from other sciences?
Applications of ecological studies
Observational vs. Explanatory science
What is a hypothesis vs. a prediction

Biomes – what are they and what helps to mold them?
What causes changes in seasons?
Climate
Effects of latitude and longitude
Incident sunlight
Solar driven air circulation
Rainshadows
Climate diagrams
Characteristics of the different terrestrial biomes
  Tropical Rainforest
  Tropical Savannah
  Temperate Forest
  Temperate Grasslands
  Desert
  Chapparal
  Boreal Forest
  Tundra
Characteristics of and factors that influence aquatic biomes
  Marine
  Freshwater
  Wetlands
  Estuaries
Anthropogenic Biomes

Evolution – definition
Natural selection – history of the idea and how the process works
Directional, Stabilizing and Disruptive Selection
Calculating allele, genotype and phenotype frequencies in a population
Hardy Weinberg calculations
Conditions for Hardy Weinberg Equilibrium
Mechanisms of evolutionary change – understand and explain them

Temperature regulation
balancing heat gain and heat loss in different environments
surviving extreme temperatures
how to mammals survive in hot arid habitats
Water regulation
Osmosis in different aquatic and terrestrial environments

Energy sources and trophic levels
Types of photosynthesis
Acquisition of nutrients in auto and heterotrophs
Challenges for different heterotrophs
Ways of avoiding being eaten
Functional response

Population abundance and distribution
Key features of a population
Ecological niches
Population dispersion and influences on
Changes in population size
Influences on rarity in organisms