# Biology 11A – Study Guide for Test 5

## Chapter 36 – Population Growth and Regulation

- Population growth, J and S curves, carrying capacity and limiting factors (limited resources, natural events, human activity, predation, parasites)
- Population distribution (clumped, uniform, random)
- Survivorship curves (early loss, constant loss, late loss)
- Human population: developing vs. developed nations, age structures, ecological footprints

*Problems: 5-12, 15, 16*

## Chapter 37 – Communities and Ecosystems

Communities

- Symbiosis: mutualism, commensalisms, parasitism
- Competition: competitive exclusion, resource partitioning, niches
- Predator-prey dynamics: defenses (chemical, camouflage, mimicry), coevolution

Ecosystems

- Energy flow: trophic structure (producers, consumers, decomposers), food chains, food webs, energy pyramids
- Chemical cycles: carbon, phosphorus, nitrogen, eutrification

*Problems: 1-3, 7, 8, 11, 14*

## Chapter 35 – Behavior

- Basic behavior: innate behavior (genetic basis and FAP), learned (environmental experiments). Types (habituation, imprinting, spatial learning, cognitive maps, association, social learning, problem-solving)
- Social behaviors: foraging (generalists, specialists, search images, group foraging), communication, mating (monogamous, promiscuous, polygamous), agonistic, dominance hierarchies, territoriality, mating rituals, altruism, kin selection

*Problems: 3-6, 9-12*

## Chapter 34 and 38 – Ecosystems and Conservation

Ecosystems

- Factors: abiotic, biotic, climate (sun and wind patterns)
- Aquatic biomes: oceans (intertidal, coral reefs, open ocean), freshwater, estuary, wetlands
- Terrestrial biomes: tropical forests, deserts, chaparral, grasslands, tundra

Conservation

- Biodiversity: hotspots, value (medicine, direct consumption, regulation of environment)
- Causes of loss/extinction: habitat destruction, introduced species, overexploitation, pollution
- Management: concepts of landscape ecology (fragmentation, edge effect, corridors), restoration, sustainable development

*Problems: Chapter 34: 1, 2, 10, 11, 13, 15, 18, 19, 21, Chapter 38: 2, 3, 5, 6, 10, 11, 14-16*

**Movie**

- Pay attention to concepts in this unit: mating rituals, competition, population growth and distribution, predator-prey dynamics, behaviors (spatial learning, migration, altruism), habitat destruction.
- Think about adaptations evolved to help survive in its environment
- Click here for a fun link!