

Study Guide for Exam 4

Viral Infections

You should know:

- The 2 parts of the virus structure
- The steps of the lysogenic life cycle of a virus
- The steps of the lytic life cycle of a virus
- How and what the 2 other particles we discussed that are similar to viruses (Viroids and Prions) infect.
- What type of virus HIV is
- How HIV infects humans
- What cells HIV infects
- Information regarding the 3 phases of HIV infection

Bacterial Infections

You should know:

- The structural components of bacteria
- How bacteria reproduce and by what process
- How bacteria like *Bacillus anthracis* infect humans
- What an endospore is and how it is helpful to a bacteria
- The three types of *Bacillus anthracis* infections of humans
- What Anthrax disease is caused by
- Why *Bacillus anthracis* is so difficult to fight
- What the current treatments for Anthrax are

General Ecology

You should know:

- How to define ecology
- The organization of a Biosphere (ecological scope)
- What is meant by ecological succession
- The 2 types of ecological succession and examples of each
- The relative time it takes for an environment to recover within each type of ecological succession

Population Characteristics

You should know:

- The difference between population density and population distribution
- Patterns of population distribution
- What factors effect the population distribution
- What is meant by the growth rate
- How to calculate the growth rate of a population
- What is meant by the biotic potential of a population
- The similarities and differences between exponential and logistic growth
- How to identify the growth pattern by looking at a graph
- The different phases of growth within exponential and logistic growth curves

What the carrying capacity means

In general the growth patterns of the human population over the past 250 years

How to interpret a growth curve

Human Impact on Ecosystems

You should know:

What comprises an ecosystem

How organisms and abiotic factors are connected in an ecosystem

What biomagnification is

How global warming is defined

What nutrient cycle most effects global warming

How CO₂ levels are a factor in global warming

What the greenhouse effect is

What the two primary greenhouse gasses are and where they come from

The effect the buildup of greenhouse gasses has on the environment

What causes acid rain

The two major pollutants that contribute to acid rain

Why Northern Europe, Canada, and the northeastern US are more affected by acid rain

What makes up smog

Where the components of smog come from

Why the trapping of ozone in smog is dangerous to the environment and to humans

What is meant by thermal inversion

The current issues in ANWR

What each side is arguing for

Some potential ecological impacts of drilling for oil in the Alaska National Wildlife Reserve