**AP BIOLOGY STUDY GUIDE: Macroevolution: Ch 24, 25, 26**

**Topics**

* Definition of a species
* Allopatric speciation and geographic isolation (3 reasons why speciation occurs).
* How speciation occurs temporal versus spatial
* Sympatric speciation
* Rate of evolution gradual versus punctuated
* Origin of life
* Classification and relatedness
* Comparison of three domains of life
* Construction and analysis of cladograms and phylogenetic trees
* Trends in evolution

**UNIT 3 Test Review**

* The appearance of a fertile, polyploid individual within a population of diploid organisms is a possible source of a new species. If this individual is capable of reproducing to form a new population, scientists would consider this to be an example of what type of speciation? Sympatric or Allopatric Speciation?

-why would this not be genetic drift or polyploidy inheritance?

* The different species of finches on the Galapagos Islands are believed to have arisen as a result of the natural selection acting on populations of finches that had experienced what type of speciation?
* Describe the following terms and be able to give examples: convergent evolution, allopatric speciation, sympatric speciation, adaptive radiation, divergent evolution, coevolution, mimicry.
* Define the Endosymbiosis theory and the evidence for it.
* Describe and give examples of punctuated equilibrium vs. gradualism.
* Identify the order of evolution for biological pathways (e.g. glycolysis, krebs cycle, calvin cycle, etc).
* Identify the principals of DARWINS theory of natural selection:
* What evidence supports that eukaryote cells are hybrids of archaean and bacteria cells?
* Which type of information is used to make phylogenetic trees?
* What did Miller/Urey try and prove about earth’s early atmosphere? What would happen if oxygen was present?
* After arriving to a new island would you expect high or low competition among species? Assuming adaptive radiation has occurred, would you expect to see niche variation and body modifications as a result?
* Founder effect, varying selective pressures, and mutations are all reasons why speciation would occur.
* Eukarya, Bacteria and Archaea are all differentiated by similarities in RNA. However, all come from a common ancestor. What do they have in common?