

## Chapter 22-25 Free Response Questions (Evolution Unit)

Please Note: During this year all free response questions must be answered in prose form- you cannot answer questions in bullet or outline form. This is the way the College Board wants it done, sorry.

1. What are the evidences many scientists have presented for evolution? List, describe, and give an example of each. There should be five pieces of evidence.  
(see chapter 22)
2. Describe the two most popular theories of evolution from the 19th century: Lamarck's and Darwin's. Be able to explain the mechanism for both theories and why Darwin's theory prevailed.
3. Do the following with reference to the Hardy-Weinberg model.
  - a. Indicate the 5 conditions under which allelic frequencies ( $p$  and  $q$ ) remain constant from one generation to the next. Indicate the 5 agents of change that could disturb this equilibrium and describe in a clearly written sentence or two, how they operate to disturb this equilibrium.
  - b. Calculate, **showing all work**, the frequencies of the alleles and the frequencies of the genotypes in a population of 100,000 rabbits, of which 30,000 are white and 70,000 are agouti. (In rabbits the white color is due to a recessive allele,  $w$ , and agouti is due to a dominant allele,  $W$ .)
  - c. If the homozygous dominant condition were to become lethal, what would happen to the allelic and genotypic frequencies in the rabbit population after two generations?  
(Note: the numbers and wording of the question will be changed if this is on the test.)  
(see chapter 23)
4. What are the barriers to reproduction that occur in nature that maintain the difference between species? List describe, and give an example of each. There should be 8 barriers.  
(see chapter 24)