Mutations – Guided Notes

1. What is a mutation?
   a. An __________________ of an organism’s _______
   b. A __________ of mutations
      i. ___________ in _______________ pair
      ii. ___________________________ of _______________ segments of DNA
   c. Can result from a ______________ during the process of _______________ or from ______________ to a physical or a chemical agent, a ______________

2. Mutations repair
   a. Most mutations are __________________________________ by the organism’s ____________
      i. When this happens, _________________ on organism
   b. When a mutation is _______________________, the altered chromosomes or gene structure is then ____________________________________________ of the mutant cell
      i. This may have _________________________________ on the cell, the organism and future generations

3. Mutations in body cells
   a. If _______________ cell is in a _______________ (somatic cell), daughter cells can be affect by the __________________________
      i. BUT mutation will ___________ be ______________ to the __________________________
         of the organism
   b. Body cell mutations can _______________ to the __________________________ or the ___________________________ of many types of __________________________

4. Mutations in Sex Cells
   a. If the _______________ cell is a _______________ (sex cell), the altered DNA will be ___________________________ and may be ______________ to subsequent __________________________
b. ______________ cell ______________ can result in _______________________

5. Mutations in Gametes (single gene)
   a. If the __________________ affects a __________________________, it is known as a ____________________________
   b. Example: the genetic basis of sickle-cell disease is the ___________________________
in the gene that codes for one of the proteins of hemoglobin
   c. Other examples of genetic disorders: Tay-Sachs disease, ____________________________,
cystic fibrosis, or ______________________

6. Mutations in Gametes (group of genes)
   a. If the __________________ affects a __________________________ or an entire ____________________________, it is known as a ____________________________
   b. __________________________ results in an ____________________________,
usually occurring during ______________________
   c. Examples of abnormalities in humans due to nondisjunction of sex chromosomes are ____________________________ syndrome (male) and ____________________________ syndrome (female)
   d. Examples of abnormalities in humans due to __________________________ of autosomal chromosomes include ________________________

7. Beneficial Mutations
   a. In some cases ____________________ are ____________________ to organisms
   b. __________________________ are changes that may be __________________ to organisms
in different or changing ______________________
   c. These mutations results in ____________________ that are ____________________ by natural selection and ________________________.