***Mutation Practice Questions for that test you have on Monday… (see p.254 in bio textbook)***

*Complete all 3 of the sentence starters (write out the whole sentences)*

G-9: Most mutations … a) help the organism b) have no effect on the organism c) hurt the organism.

● One example of an organism getting a helpful mutation is…

● One example of an organism getting a harmful mutation is…

G-10: If I spill a mutagen (a chemical that causes mutations) on my skin, will the mutations in my skin cells get passed on to my children? Why or why not?

* There is one white rabbit among a family of brown rabbits. How did this occur?
1. Separate mutations in all of the brown rabbit’s hair cells made them turn white
2. A mutation in a brown rabbit’s sperm/egg cell produced a white baby rabbit
3. A mutation in one of the brown rabbit’s cells spread to all of its cells

*G-8: What kind of mutation (from step 10) will likely have the following effects:*

● *Won’t affect the protein’s function*

● *Slightly affects the protein’s function*

● *Moderately affects the protein’s function*

● *Makes the protein lose its function*

● *Gives the protein an entirely new function*

***Mutation Practice Answers – Please see objective sheet for a full list of things to study (chapter 8)***

*Complete all 3 of the sentence starters (write out the whole sentences)*

G-9: **Most** mutations … a) help the organism **b) have no effect on the organism** c) hurt the organism.

● One example of an organism getting a helpful mutation is… **mutant white rabbit in the snow**

● One example of an organism getting a harmful mutation is… **mutant white rabbit in the forest**

G-10: If I spill a mutagen (a chemical that causes mutations) on my skin, will the mutations in my skin cells get passed on to my children? Why or why not? **No, b/c only sperm/eggs make up your children**

* There is one white rabbit among a family of brown rabbits. How did this occur?
1. Separate mutations in all of the brown rabbit’s hair cells made them turn white
2. **A mutation in a brown rabbit’s sperm/egg cell produced a white baby rabbit**
3. A mutation in one of the brown rabbit’s cells spread to all of its cells

*G-8: What kind of mutation (from step 10) will likely have the following effects:*

● *Won’t affect the protein’s function –* ***silent (amino acid stays the same)***

● *Slightly affects the protein’s function –* ***neutral (amino acid replaced by similar amino acid)***

● *Moderately affects the protein’s function –* ***missense (amino acid replaced by different kind of amino acid)***

● *Makes the protein lose its function –* ***nonsense (protein gets cut short)***

● *Gives the protein an entirely new function –* ***frameshift (all amino acids after the mutation are changed)***