Mutations Practice

Name _____

Complete the following information on mutations.

1. Define a mutation.

2. Define mutagen.

3. Define and illustrate a point mutation.

4. Define and illustrate a frame shift mutation. Name two types of frame shift mutations.

5. Describe how DNA can mutate without affecting the phenotype.

AATGCCAGTGGTTCGCAC

6. Write the base sequence of the complementary m-RNA strand.

7. Write the amino acid chain that results from this strand.

8. If the seventh nucleotide in the original master strand of DNA were changed from A to T, what would the resulting new m-RNA be?

9. Write the amino acid chain that results from the change described above.

10. Draw a circle around the amino acid in #9 that changed as a result of the mutation above.

11. Name the type of mutation described above. (Be specific!)

AATGCCAGTGGTTCGCAC

12. If a `G' were added to the original master strand of DNA after the third nucleotide (T), what would the resulting mutated m-RNA look like?

13. Write the amino acid chain that would result from this change.

14. Explain how the amino acid chain has changed from the original (from #7) as a result of this mutation.

15. Name the kind of mutation described in #14. (Be specific!)

16. Now assume that the `G' in the fourth nucleotide position were to be cut out of the original DNA. Write the amino acid chain that would result from this change.

17. Explain how the amino acid chain in #16 has changed when compared to the chain from #14.

18. Name the kind of mutation described in #17. (Be specific!)