Name: _____ **Class Period:** _____

DPM #2 Review

1. Original DNA strand : AAA TTA GGC

mRNA: _____

tRNA: _____

Amino Acid: _____

Mutated DNA strand : AAA TTA GAC

mRNA: _____

tRNA: _____

Amino Acid: _____

2. What type of mutation is shown above? (Insertion, Deletion, or Substitution) _____

3. How many amino acids changed from the original DNA strand to the mutated DNA strand? _____

4. Based on the F_1 generation below, what are the genotypes of each parent? _____

5. Are the parents homozygous dominant, heterozygous, or homozygous recessive for their genotypes? (Circle **ONE** answer choice).

CC	Cc
Cc	cc

6. Put the following vocabulary words into the correct order for protein synthesis: (Protein, RNA, DNA, Trait/Phenotype, Amino Acid) _____

7. Suppose a man is heterozygous A for his blood type, and a woman is heterozygous B for her blood type. What possible combinations could result?

8. Does Transcription or Translation occur in the nucleus? _____

9. What is the name of the genetic info that never leaves the nucleus? (DNA or RNA) _____

10. Which type of RNA copies the DNA? (mRNA, tRNA, or rRNA) _____

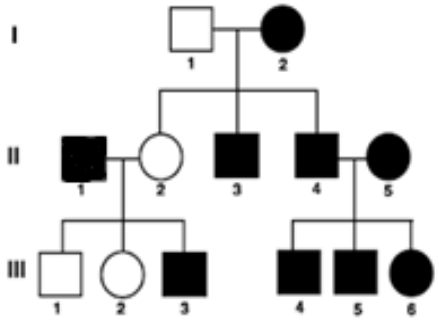
11. Having brown hair (B) is dominant over having red hair (b) and having freckles (F) is dominant over no freckles (f). Cross two parents that are heterozygous for both traits.

12. What type of mutation is shown to the right? _____
(Insertion, Deletion, or Substitution)

Original DNA: TTA GGC AAT CCG GGC TTA GUU
Mutated DNA: TTA GGC TAA TCC GGG CTT AGU U

13. Who will be affected by a liver cancer cell mutation? (Individual or the Offspring)? What type of cell is affected? (Somatic cell or gamete cell)?

14. The pedigree to the right represents an autosomal dominant trait. The shaded areas represent individuals that express the dominant trait.



A. What are the genotypes for I-1 & I-2? _____
B. What is the gender of III-5? _____
C. How many grandchildren did I-1 & I-2 have? _____
D. How are III-4 & II-3 related? _____

15. Are the chromosomes in a somatic (body) cell the same or different from those in a gamete (sex) cell? _____
How many chromosomes are in a human somatic cell? _____ Gamete cell? _____

16. Circle one of each answer choice in the following sentence: The goal of natural selection is to (survive/die) long enough to find a (mate/job) and to eventually have (no offspring/offspring).

17. True or False: Genetic Variation can happen when one organism is driven from its habitat, joins another, and reproduces within the new population.

18. Excluding the species level, what is the next smallest level of taxonomy that two organisms can be related? _____

19. If one population of frogs is introduced into a second population of frogs (assuming they're the same species, and that the new genes benefit the second population), would we see an increase or decrease in genetic variety? _____

20. Define what an adaptation is. _____