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**EOC Review #3 – Genetics Write answers on a separate sheet of paper or on the back.**

1. How can mutations be beneficial?

2. What are the means by which genetic recombination occurs?

3. How do these processes affect genetic variation?

4. How can a male inherit a sex-linked condition? How can a female inherit a sex-linked condition?

5. How could you tell if codominance was the mode of inheritance for a certain trait?

6. How could you tell if incomplete dominance was the mode of inheritance for a certain trait?

7. How is it possible for a person to be left-handed if both parents are right-handed? Show a Punnett square that demonstrates this.

8. Which type of inheritance pattern is responsible for a wide range of phenotypes in traits such as height, skin color, and hair color?

9. How is it possible for there to be four human blood types, but only three alleles for blood type?

10. What type of inheritance is responsible for human blood type?

11. Create a Venn diagram or table to compare and contrast mitosis and meiosis. In addition to other information, include the type of reproduction associated with each process, comparison of parent cell & daughter cells, and consequences for genetic variation.

12. Explain why a mutation in a DNA sequence may cause a phenotypic change.

13. How is it possible to have a mutation in your DNA and not be aware of the mutation’s presence?

14. What is a consequence of mutations in gametes?

15. When, where, & why does DNA replication take place?

16. Explain how DNA replication takes place.

17. How do the new DNA strands compare to original strands? Why is this important for the organism?

18. How does the information in DNA become expressed as traits?

19. Explain the basic process of transcription.

20. Explain the basic process of translation.

21. How does the genetic code compare in all the different organisms on Earth?

22. List some types of biotechnology used in medicine and society today. Are there medical or ethical issues related to any of these technologies?