

"Take home" Microbial Genetics Exam **DUE TUESDAY AM, JUNE 2nd**

Answer each question concisely AND accurately using your own words. Use of copy/paste from internet sources will result in failure of exam.

Please type out answers either on a word doc and email it to me at our Blackboard class by Tuesday midnight.

1. What is the difference between an inducible gene and a repressible gene? Give an example of each.
2. Define what is meant by the "redundancy" ("degeneracy") of the genetic code. What is the advantage of the redundancy (degeneracy) of the genetic code?
3. Compare and contrast gene expression in prokaryotes and eukaryotes.
4. As a result of a substitution mutation, a DNA base triplet AGA is changed to AGG. State specifically what effect this would have on the resulting protein and state what type of mutation it would result in. Show your work.
5. A third triplet in a bacterial gene is TTT. A substitution mutation changes it to ATT. State specifically what effect this would have on the resulting protein and state what type of mutation it would result in. Show your work.
6. Explain the difference between vertical and horizontal transmission of genetic traits.
7. Which of the methods of horizontal gene transfer requires contact between donor and recipient? Explain the specifics.