

The third exam covers chapters 14 through 16. The exam will be essay and problems. No multiple choice, matching, or true/false questions.

Old exam

- 1) Explain the process of **initiation of translation** in prokaryotes. Include all the proteins and other molecules that are involved.
- 2) The genetic code is organized in such a way as to minimize the effects of detrimental mutations. How is the code organized to do this?
- 3) We discussed the *lac* operon in detail. Answer the following questions.
 - a) Draw the operon and label the important parts.
 - b) Explain how lactose turns on the operon.
 - c) Explain how glucose affects transcription of the operon.
 - d) What is the advantage of having three operators instead of one?
- 4) Describe how **either** the HO gene or the β -interferon gene is regulated by activators.
- 5) Describe two experiments that can determine which proteins in human cells bind to the CLU protein. **Extra credit** (2 points): What does the CLU protein do?
- 6) Explain how micro RNA (miRNA) is produced, and how they affect/regulate genes.