Your Name

Exam 3, BIO 325 Genetics – Apr. 13, 2009

1-5. (10 Pts each, with excess (2 points ea.) to penalize ea. 10 points max.)

1. Mutations in either of two sites in operon will produce a constitutive phenotype. These two sites are: **operator** and **promoter**. (If operator mutation will cause warnings, then constitutive right)

2. The most critical step in the regulation of most bacterial genes is the binding of **RNA** and **polymerase** to the **promoter**.

3. Transcription and translation of eukaryotic genes are decompartmentalized in Eukaryotes. If the code of eukaryotic ferredoxin is mutated/deleted/inactivated, in fungi, the **fungi** gene will be expressed, producing in its cells **functional** ferredoxin.

4. "Certain correlated modifications of chromatin can dictate the rate of gene expression at genes level" is referred as **histones** and **code**.

5. **Ubiquitin** is a small protein that is covalently attached to polypeptides in long chains, targeting the tagged proteins for degradation. Some signaling proteins are **DNA**, but many more proteins in eight.

6. **Enhancer** is a DNA segment that functions at a distance from the gene they are regulating, either 5' or 3' of the gene.

7. RNA polymerase I is responsible for synthesizing **rRNA** using a DNA template.

8-13. True or False. Circle one (1 pt ea.)

8. Because there is no nuclear membrane in prokaryotes, transcription and translation from a single gene can be taking place at the same.
True False

9. Operons originating in an example of epigenetic alteration of DNA.
True False

10. Gene coding RNA for an regulatory molecular always exist as small RNA molecules (less than 70 nucleotides).
True **False**

11. Intron/Exons in Human DNA are mostly associated with more significantly conserved Chromosomes.
True **False**