Your Name:

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

1-7 . Fill the blank with word(s) (2 points ea., no partial score)

1. Mutations in either of two sites in operon will produce a constitutive phenotype. These two sites are: __**operator**__ or __**repressor**__ **(If operator was one of your answers, then considered right)**

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

3. Numerator and denominator elements regulate sex determination in Drosophila. If the ratio of numerator [illegible] to autosomes/denominator [illegible] is high, the __**Sxl**__ gene will be expressed, generating a fly with __**female**__ sexual characteristics.

4. "Certain covalent modifications of Histone can dictate the fate of gene expression at given loci" is referred as __**histone**__ __**code**__ hypothesis.

5. __**Ubiquitin**__ is a small protein that is covalently attached to polypeptides in long chains, targeting the tagged protein for degradation **(some spelling errors are OK, but make sure you know it right)**

6. __**Enhancers**__ are cis-acting DNA sequences can function at a distance from the gene they are regulating, either 5' or 3' of the gene.

7. RNA polymerase I in eukaryotes synthesizes __**rRNA**__ using a DNA template.

8 - 11. 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. Genomic imprinting is an example of epigenetic alteration of DNA.
True False

10. non-coding RNAs as regulatory molecules always exist as small RNA nucleotides (less than 50 nucleotides)
True **False**

11. Acetylation at Histone H3 Lys 9 usually associated with transcriptionally repressed chromatin.
True **False**