Ch. 18: Gene Expression and Chapter 19: Virus Study Guide

1. Draw and label the 3 parts of an operon.
2. Contrast inducible vs. repressible operons.
3. What is the epigenome and why is it considered “flexible?”
4. How does DNA methylation and histone acetylation affect gene expression?
5. What is the role of activators vs. repressors? Where do they bind to?
6. Compare oncogenes, proto-oncogenes, and tumor suppresor genes.
7. What are the roles of the ras gene and the p53 gene?
8. What are HOX genes? Why are they evolutionarily significant?
9. What is the purpose of a PCR? When would it be used?
10. Compare and contrast lysogenic and lytic viral cycles. Give an example of each.
11. What is a retrovirus? How does it infect its host?