

## Molecular Genetics Exam Review

30 multiple choice questions (15 points) and 1 free response question (12 points)

Below are listed the topics on the exam. Make sure you understand all the details about each topic.

<b>Chapter 16</b> <ul style="list-style-type: none"><li>● Be able to determine the percentage of nucleotides when given one nucleotide sample.</li><li>● Replication in prokaryotes and eukaryotes</li><li>● DNA polymerase</li><li>● DNA ligase</li><li>● Helicase</li><li>● Topoisomerase</li><li>● Leading vs Lagging strand</li><li>● Direction of elongation</li><li>● Hershey and Chase experiment</li></ul>	<b>Chapter 17</b> <ul style="list-style-type: none"><li>● 5'cap and poly-A tail</li><li>● Exonucleases</li><li>● Translation</li><li>● tRNA</li><li>● A site, E Site, P Site</li><li>● Release Factor</li><li>● Mutations</li><li>● codons</li><li>● RNA transcription</li><li>● Be able to determine a DNA sequence when given the amino acid polypeptide sequence</li><li>● Be able to determine the DNA sequence when given the mRNA sequence</li></ul>
<b>Chapter 18</b> <ul style="list-style-type: none"><li>● Tryptophan operon</li><li>● Repressor</li><li>● Operator</li><li>● Inducer</li><li>● Repressible operon</li><li>● Splicosomes (snRNPs)</li><li>● Gene expression altering in eukaryotes vs prokaryotes</li><li>● Specific mechanisms of protein regulation in eukaryotic cells</li></ul>	<b>Chapter 19</b> <ul style="list-style-type: none"><li>● Viruses or types of viruses that deviate from the flow of genetic information from DNA to protein</li><li>● Host range of viruses</li><li>● Herpesvirus-mediated diseases</li><li>● Lytic cycle</li><li>● Lysogenic cycle</li><li>● Capsid</li></ul>
<b>Chapter 20</b> <ul style="list-style-type: none"><li>● Will be given an example very similar to the transformation lab and will need to answer several MC questions around this example</li><li>● Need to have a very good understanding of the plasmid transformation lab and be able to apply the same concepts to a different plasmid transformation.</li></ul>	