**Chapter 12**

1. What is the result of mitosis?
2. What are the stages of the cell cycle and what happens during them?
3. What happens during each stage of mitosis?
4. How does plant and animal cytokinesis compare?
5. What is MRF and how does it work?
6. What are homologous chromosomes?

**Chapter 13**

1. Ploidy level of different cell divisions
2. Differences between meiosis I and meiosis II
3. What kind of reproduction leads to quicker evolution?
4. Difference between somatic an d germ cells
5. How many gametes can AaBBCcDdee create

**Chapter 14**

1. What are Mendel’s two laws and when do they occur?
2. Why did the F1 of Mendel’s classic pea experiment always look like one of the parental generation?
3. Albinism crosses and phenotype problems.
4. Genotypic and phenotypic ratios of monohybrid cross.
5. When you Cross AaBbCc with AaBbCc what are the chances the offspring are AAbbCc
6. A roan cross like Genetics #2
7. What is polygenic inheritance?
8. Give an example of epistasis.
9. Do a cross involving incomplete dominance.

**Chapter 15**

1. Explain Thomas Morgans experiment on flies with white eye color
2. Cross with color blindness
3. Why do female mammals only have one active x chromosome?
4. Dihybrid cross involving sex linked genes.
5. What is gene linkage, and what does it cause?
6. Given a gene linkage map, be able to explain which alleles will cross over more frequently
7. Explain how Down Syndrome occurs
8. What is translocation?

**Chapter 16**

1. What did Griffith observe in his transformation experiments?
2. Given 28% of a DNA strand is Cytosine, find the other three bases.
3. Why is DNA antiparallel?
4. What does DNA Polymerase III do? What direction does it move in?
5. What is the difference between the leading and the lagging strand?
6. What does DNA only elongate from 5’ to 3’
7. What does DNA Ligase bond together?

**Chapter 17**

1. Given a strand of DNA is 5’ CAT 3’ find the corresponding strand of mRNA. (It is not dog)
2. Given a table of codons, like your quiz and POGIL, find amino acids based on mRNA codons and vice versa
3. What is the central dogma?
4. What is transcription?
5. What is the universal language of all living things?
6. What does alternate RNA splicing allow an organism to do?
7. Given the DNA sequence CAT given the corresponding tRNA sequence.

**Chapter 18**

1. What is a promoter?
2. What is a repressor?
3. What would happen if a mutation occurred on the regulatory gene of a repressible operon? Inducible?
4. What starts an inducible operon? Repressible?
5. What does RNA interference do?
6. What genes mutate to cause cancer?

**Chapter 19**

1. Why do many consider viruses nonliving?
2. What is the differences between the lytic and lysogenic life cycles of viruses?
3. What is a retrovirus? Give examples.
4. What is reverse transcriptase?
5. What is the best way to prevent viral infections?

**Chapter 20**

1. Given a cut segment of DNA arrange the pieces as how they would appear after electrophoresis.