1. How many chromosomes do prokaryotes have and in what form?

2. How many chromosomes do humans have and in what form?

3. What are small extra-chromosomal double-stranded circular DNA molecules that are found in prokaryotes, viruses, and eukaryotes?

4. Which scientist team used radioactive tags on sulfur and phosphate to identify genetic material?

5. Which scientist did the initial experimentation on mice with the virulent strain and non-virulent strain of bacteria?

6. Which scientist team used enzymes to degrade cell components until they found that when DNAase was used, then transformation ceased?

7. Who was responsible for Photo 51?

8. Who was her partner in radiographic crystallography?

9. What team was first to put the correct model of DNA together?

10. Who's rule - the % of A equal the % of T?

11. DNA replicates by what method/process?

12. What enzyme assembles the new strand by putting the nucleotides together into a new strand?

13. Does the leading strand, the lagging strand, or both replicate in a 5' to 3' direction?

14. Draw two 5 carbon sugars in a double stranded antiparallel orientation. Label the carbons.

15. What is the basic building block of DNA (the monomer)?

16. What are the three components of this monomer?

17. What are four differences between RNA and DNA?

18. What are the two nitrogenous bases that are purines?

19. What are the three nitrogenous bases that are pyrimidines?

20. Which has a single ring structure, purines, or pyrimidines?

21. Which type of RNA carriers the message to the ribosome?

22. Which type of RNA is bound to specific amino acids?

23. Which type of RNA is the functional building block of ribosomes?
24. What type of RNA chops up and degrades mRNA?
25. What is transcribed to form mRNA? (not looking for DNA)
26. In what direction is the strand of mRNA synthesized?
27. What are three modifications mRNA undergoes before leaving the nucleus?
28. Where does translation occur?
29. What are three steps of translation?
30. Put these in order from first to last: Trait, transcription, protein synthesis, DNA, translation
31. Where does translation begin?
32. What are the 3 letter words of mRNA called?
33. What about on tRNA?
34. What do codons code for?
35. What do all of the amino acids make up?
36. Can amino acids have more than one codon?
37. What causes translation to cease?
38. What technique separates fragment length?
39. What technique amplifies DNA?
40. What cuts DNA at palindromes?

41. What is the process called when bacteria takes up a plasmid through the membrane?
42. Describe and give an example of a GMO.
43. An animal that is genetically identical to another:
44. Describe how insulin can be made through Genetic Engineering:
45. Where does mitochondrial DNA come from?
46. Explain y-inheritance.

47. In eukaryotic gene regulation, what area of DNA interacts with the promoter to start transcription?

48. A prokaryotic gene only turned on in the presence of a molecule is called a/an:

49. The regulatory gene makes what?

50. What can inhibit gene expression?

51. Regulatory proteins block transcription: negative or positive control?

52. Regulatory proteins that stimulate transcription: negative or positive?

53. Are all mutations negative?

54. What causes histones to be more tightly wound?

55. Does this increase or decrease transcription?