204L Postlab Ch.5: PCR 1

1. Why are hydrogen bonds so vital to the structure of DNA? (2 pt.)

Hydrogen bonds are important because they hold the two strands of DNA together. Furthermore, the h-bonds twist the DNA into the double helix shape.

1. Describe the two roles primers play in PCR (2 pt.)

The primer defines the area that will be replicated (amplified) in the PCR. It also binds to the DNA to start the replication.

1. List the ingredients of master mix and state the purpose of each ingredient. (3 pt.)

The master mix is made of Taq DNA polymerase (enzyme), free nucleotides to build the DNA (dNTPs), buffer to maintain pH, salts, MgC12, primers, salts, and magnesium ions.

1. In addition to master mix, what else must be added to each PCR tube? Why? (2 pt.)

Primer is also added. Also, the suspects DNA. This is because we want to amplify the DNA, so we can test it later.

1. How can DNA evidence be used to convict or exonerate a defendant? Why is DNA evidence so powerful? (1 pt.)?

DNA evidence can be used to convict or exonerate a defendant because each person has unique regions of their DNA (unless they are identical twins). Therefore, one can test DNA found at the crime scene and compare it to the suspects DNA. Since each person has unique sections of DNA, it will either match (inditing them) or not match (exonerating them).