**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_**

**Question**

1.     Go through the electrophoresis virtual lab in the site below for answers to the questions:

[**http://learn.genetics.utah.edu/content/labs/gel/**](http://learn.genetics.utah.edu/content/labs/gel/)

a.     Describe the main purpose of DNA electrophoresis.

b.     What are the two main ingredients that are used to make a DNA gel?

c.      Describe the composition and purpose of the buffer.

d.     What is added to the DNA samples to help visualize them while loading into the gel wells?

e.     During electrophoresis, what sign will you see in the buffer that will tell you that current is running?

f.       What stain is used to see the DNA on the gel?

g.     Describe the pattern of migration of DNA of different sizes.

h.     There are 3 major DNA sizes in your sample. What are the sizes, in bases, of the three DNA fragments?

2.     Perform the PCR virtual lab in this website:[**http://learn.genetics.utah.edu/content/labs/pcr/**](http://learn.genetics.utah.edu/content/labs/pcr/)

a.     What does PCR stand for?

b.     What are primers?  Why are they indispensable for PCR?

c.      What is the specific DNA polymerase that is used in PCR?  What is its function in PCR?  What’s the scientific name of the bacteria where the enzyme comes from?  Where are the bacteria normally found?

d.     Why are nucleotides added to a PCR reaction?

e.     Aside from b, c, & d, what’s the fourth indispensable component added to for a PCR reaction to work?