

## DNA Replication "S" Phase

BIOL 210 SI

1. What is the "semi-conservative model" of replication?
2. What is the origin of replication?  
What is the difference in the # of origins in Euk vs. Prok. Cells. Why would it be important that Eukaryotic cells have more than one?
3. a) Draw a replication fork: Label structures and enzymes involved: see list below for help  
  
b) Describe the function or structure of each as applicable:  
**Helicase**  
**Single Stranded Binding proteins**  
**Primase** (function & why is it necessary?)  
**DNA polymerase** (describe detailed function in DNA synthesis):  
  
**5' & 3' ends**  
**Leading Strand**  
**Lagging strand**  
**Okazaki fragments**  
**RNAseH**  
**Ligase**
4. Why is the lagging strand made discontinuously in fragments?
5. Why is it important that cancer cells produce the **telomerase** enzyme? Why do certain cells produce telomerase while others do not? Do you think neurons make telomerase?