

## 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?