

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?