

Quiz 1: DNA Replication

Name:

Winter 2013, Mr. Burdick

Hour:

Date:

Total Score: (20 Points Possible).....

Selected Response Clear Purpose:

This formative task was developed to assess the knowledge and understanding of key components that high school students would need in order to understand the basics of DNA Replication. The purpose of the assessment is to help the instructor determine if the students understand the key concepts of DNA Replication from pictorial interpretations at this point of the unit. Another purpose of this formative assessment is to give students a feedback on their knowledge/understanding of DNA Replication as that they will need to know before they can effectively move on further in General Biology.

Michigan Standards/Benchmarks:

- STANDARD B4: GENETICS
 - **B4.2x DNA, RNA, and Protein Synthesis**
 - B4.2g Describe the processes of replication, transcription, and translation and how they relate to each other in molecular biology.

Learning Target:

Learning Targets	Knowledge Questions
I can demonstrate how the genetic information in DNA molecules provides instructions for assembling protein molecules and that this is virtually the same mechanism for all life forms.	1-10

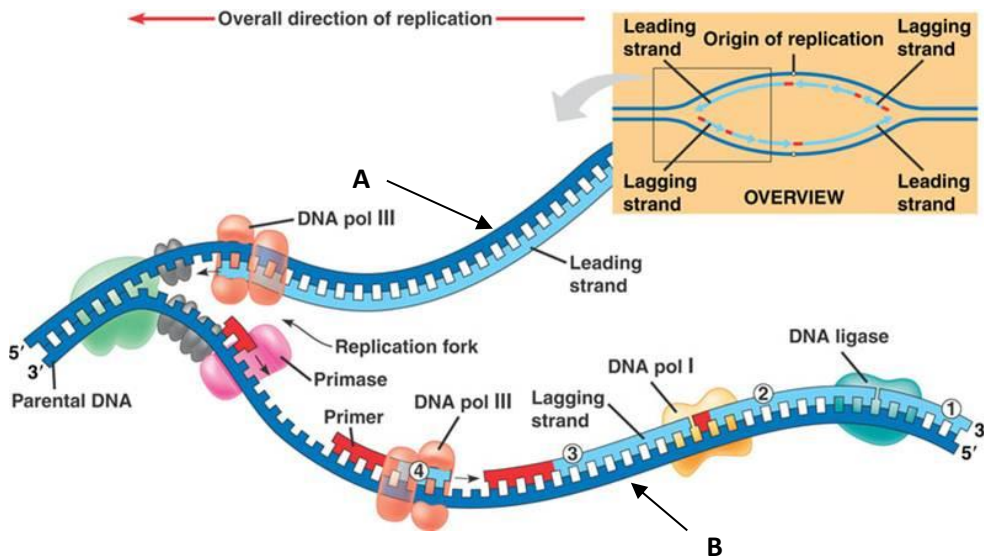
Directions:

- This quiz is worth 20 points and please put your name, hour and date in the upper left corner. Please place your answers on the answer sheet.
- Once you are completed, look over the test again and double check your work. After this, quietly walk up to my desk and place the test in the basket for your class.
- Please be quiet since every student deserves a quiet environment for this assessment.

- Take your time; you have the rest of the class period to complete this test. Don't rush and Good Luck! If you have any questions, raise your hand and I will assist/clear up any misunderstandings.

Multiple Choice (2pt each): For each question below, select the best answer by filling in the corresponding letter and filling in the bubble on your answer sheet. You may use a scrap piece of paper to solve these problems. Also, make sure you check or mark if you are sure or unsure about the answer.

For Questions 1-5, refer to the following diagram of a DNA replication fork.



1. Leading strand of DNA replication is
 - a. A
 - b. B
 - c. Not shown in Diagram
 Sure: _____ Unsure: _____

2. Enzyme that builds short stretches of RNA(from which DNA replication can begin) during replication/
 - a. Helicase
 - b. Sing-strand binding proteins
 - c. Primase
 - d. DNA Polymerase (III)
 Sure: _____ Unsure: _____

3. Enzyme that unwinds double-stranded, parental DNA during DNA replication
 - a. Primase
 - b. DNA Liagse
 - c. Topoisomerase
 - d. HelicaseSure: _____ Unsure: _____
4. Enzyme that joins together Okazaki fragments
 - a. DNA Ligase
 - b. DNA Polymerase (III)
 - c. Primase
 - d. HelicaseSure: _____ Unsure: _____
5. Enzyme that synthesis DNA continuously on the leading strand
 - a. Helicase
 - b. DNA Ligase
 - c. DNA Polymerase (III)
 - d. PrimaseSure: _____ Unsure: _____
6. In DNA Replication, Cytosine will pair with what base in the DNA molecule
 - a. Adenine
 - b. Thymine
 - c. Uracil
 - d. GuanineSure: _____ Unsure: _____
7. True or False. DNA is a polymer of amino acids put together from a peptide bonds.
 - a. True
 - b. FalseSure: _____ Unsure: _____
8. In DNA Replication, Adenine will pair with what base in the DNA molecule
 - a. Cytosine
 - b. Thymine
 - c. Uracil
 - d. GuanineSure: _____ Unsure: _____

9. What is the basis for the difference between how the leading and lagging strand of DNA molecules are synthesized?
- a. DNA Polymerase can work on only one strand at a time.
 - b. The origins of replication occur only at the 5' end.
 - c. DNA polymerase can join new nucleotides only to the 3' end of a growing strand.
 - d. Helicase and single-strand proteins work at the 5' end.

Sure: _____ Unsure: _____

10. True or False. During DNA replication, DNA polymerases proofread each nucleotide (against its template) as soon as it is added to the growing strand?
- a. True
 - b. False

Sure: _____ Unsure: _____