Date _____

Name _____ Student No. _____

Teacher _____ School _____

Biology 12
Section Assignment 2.1

Remember to submit the following with this assignment:

Title	From	Marks
Part A: DNA Replication	2.1	14
Part B: DNA Replication	2.1	25

Section Assignment 2.1 Part A
DNA Replication

This is a formal assessment that will be submitted to your instructor for evaluation.

Select the best answer. (2 marks each)

1. Replication refers to the synthesis of:

   A. ATP

   B. DNA

   C. bacteria

   D. BGH

2. What modifications are necessary to rewrite the following DNA strand as an RNA strand?

DNA strand: GGCATTGCA

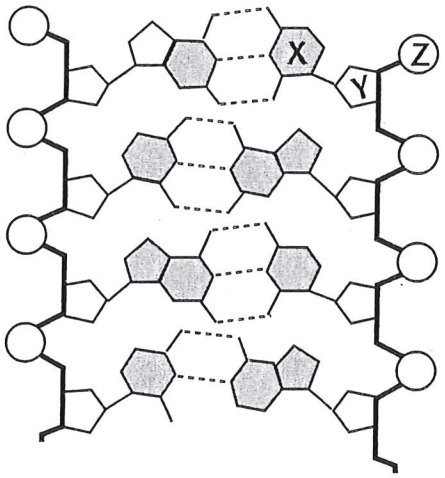
   A. CCGUAACGU

   B. GGCAUUGCU

   C. CCGTUUGCA

   D. GGCUAACGU

Use the following diagram to answer questions 3 to 6:



3. The structure labelled X is a _____.
   A. base
   B. deoxyribose sugar
   C. phosphate group
   D. nucleotide

4. The structure labelled Y is a _____.
   A. base
   B. deoxyribose sugar
   C. phosphate group
   D. nucleotide

5. Z represents a _____.
   A. base
   B. deoxyribose sugar
   C. phosphate group
   D. nucleotide

6. Taken together, structures X, Y, and Z represent a _____.
   A. base
   B. deoxyribose sugar
   C. phosphate group
   D. nucleotide

7. Which of the following can be produced using recombinant DNA techniques?
   A. testosterone
   B. glycogen
   C. insulin
   D. cholesterol

Marks

14

Section Assignment 2.1 Part B
DNA Replication

1. Describe the structure of DNA. Include the components of a nucleotide, the types of bonds found between bases, and complementary base pairs. You may choose to draw and label a diagram. (5 marks)

2. Identify and briefly describe the three steps involved in DNA replication. (5 marks)

3. Identify three differences between the structures of RNA and DNA. (5 marks)

4. List and describe three uses of rDNA in biotechnology. Identify at least two advantages and two disadvantages associated with each use. Your *Inquiry Into Life* textbook's section titled "Biotechnology" (transgenic bacteria, plants, and animals) provides useful information to help you answer this question. If you use another source, be sure to include a reference (e.g., a complete URL). (10 marks)

Marks

25