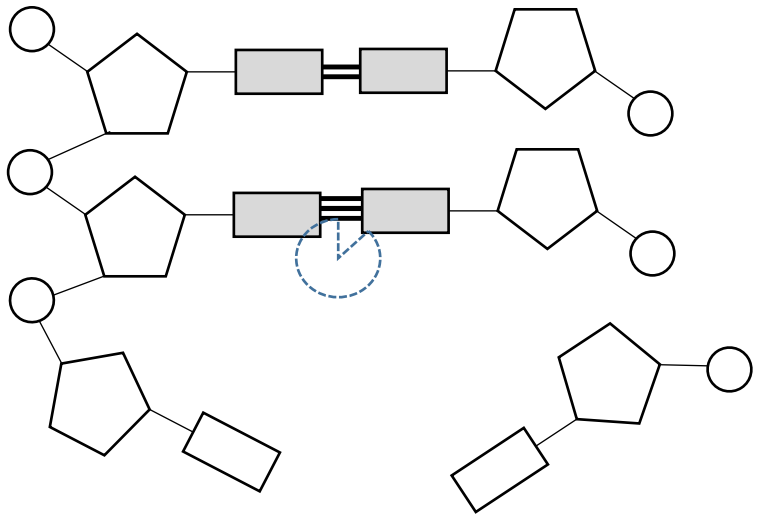
DNA REPLICATION (SL)

1. The purpose of DNA replication is to make _____ copies. The sequence of the _____ must remain the same. DNA replication is crucial for _____, _____ development and _____ reproduction.

2. The process is most easily understood with a simple diagram. Complete the diagram by
    a. Drawing and naming the missing bonds.
    b. Labelling the bases shaded gray, one circle, and one pentagon, and name the types of bond between them.



3. Understanding the structure helps one understand the steps for replication:
    a) Firstly, _____ enzyme _____ the DNA _____ helix, forming two separate strands by breaking the _____ bonds between _____ _____ _____.
    b) Next free _____ _____ are added to the _____ strands by _____ _____ enzyme.

4. DNA replication is _____- _____ because half of each new molecule came from the original molecule. This method of replication reduces the chance for _____ when the DNA is copied.

5. DNA replication can take place artificially in the laboratory. This is called the _____ chain _____.

   This process _____ small samples of DNA, so that they can be used for purposes such as determining _____ and who might have committed a crime. This is done with gel electrophoresis, where segments of DNA are sorted according to their _____ and _____.

   To carry out _____ (the abbreviation), the DNA is _____, which breaks the _____-_____ between the _____ _____ _____.

   Then _____ are added to the template strands. These specify the region(s) to be _____.

   Then _____ enzyme from _____ _____ is used. It is called _____ _____ for short. It does not _____ at high _____ because this organism evolved by _____ vents. The process is repeated as many times as needed.

