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Highlight the steps of DNA replication

Initiation
this is the first step of DNA replication and the point where replication begins. In this step hydrogen bonds between bases of the two antiparallel strands are broken. The two strands are then unwound. Helicase is the enzyme that separates the two strands. The starting point where the separation starts is known as the origin of replication. A replication fork is then created.

Elongation
This is the binding of RNA Primase in the starting point of the 3'-5' parent chain. RNA Primase can attract RNA nucleotides which bind to the DNA nucleotides of the 3'-5' strand due to the hydrogen bonds between the bases. RNA nucleotides are the primers for the binding of DNA nucleotides.

Termination
This process happens when the DNA Polymerase reaches to an end of the strands. So, the end of the parental strand where the last primer binds isn't replicated. These ends of linear (chromosomal) DNA consist of noncoding DNA that contains repeat sequences and are called telomeres. As a result, a part of the telomere is removed in every cycle of DNA Replication.

Outline the functions of DNA replication enzymes

1. Helicase causes strand separation which leads to the formation of the replication fork. It breaks the hydrogen bond between the base pairs to separate the strand.

2. SSB Protein helps to stop the strands from binding again.

3. DNA Primase aids in the synthesis of primers.

4. DNA Polymerase III makes the new strand by reading the nucleotides on the template strand and specifically adding one nucleotide after the other. It also helps in proofreading and repairing the new strand.

5. DNA Polymerase I uses the help of RNase H to remove the primer added at the origin and fill in the gaps.

6. DNA ligase helps in the closing of nicks in double-stranded DNA.