

QUESTION 3

Which of the following is the correct order in which events take place while replicating DNA?

- (A) Unzip DNA ⇒ add DNA nucleotides ⇒ make primer ⇒ replace primer ⇒ ligate DNA fragments
- (B) Unzip DNA ⇒ make primer ⇒ ligate DNA fragments ⇒ replace primer ⇒ add DNA nucleotides
- (C) Unzip DNA ⇒ copy leading strands ⇒ copy Okazaki fragments ⇒ replace primer ⇒ ligate DNA fragments
- (D) Unzip DNA ⇒ make primer ⇒ add DNA nucleotides ⇒ replace primer ⇒ ligate DNA fragments

QUESTION 4

Suppose a cell is exposed to a toxin that completely blocks DNA polymerase I but leaves the other DNA replication proteins unaffected. What effect would this have on DNA replication?

- (A) Replication would proceed as normal, but possibly slower.
- (B) The cell would synthesize leading strands but not lagging strands.
- (C) Ligase would form phosphodiester bonds between RNA and DNA.
- (D) The RNA primers would not be replaced with DNA.

USE THE IMAGE AND INFORMATION BELOW TO ANSWER QUESTIONS 5 AND 6

The image below shows one replication fork during DNA replication. DNA is shown as black lines, and RNA as thicker grey lines.

