

VEER KUNWAR SINGH UNIVERSITY - ARA

B.Sc.

ZOOLOGY (HONOURS) -

PART - III

PAPER - VI

FROM

DR. RAJESH VERMA  
ASSISTANT PROFESSOR

AND

HEAD - U.G. DEPARTMENT OF ZOOLOGY

D. K. COLLEGE - DUMRAON (BUXAR)

Mobile - NO. 094305-10473

email = dr rajesh verma 2020 @ gmail. com.

## DNA - Replication

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It's the biological process

- Replication - 2 DNA
  - ① Original DNA
  - ② DNA replica

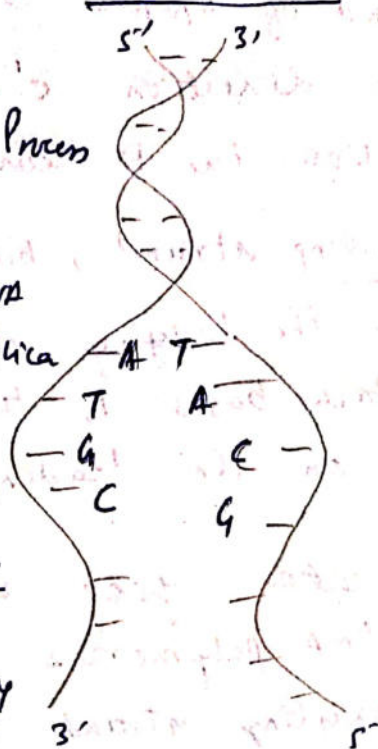
Steps - 4

① Replication Fork

② Primer Binding

③ Elongation

④ Termination



During Replication - double stranded DNA molecule is copied to produce two identical DNA

DNA Replication - occur in - cytoplasm of prokaryotes and in the nucleus of eukaryotes

DNA Primase is an enzyme responsible for replication of DNA

DNA Polymerase uses the RNA primer for replication of single stranded DNA

(2)

The strand of DNA - are oriented in opposite direction  $5'$  to  $3'$  and  $3'$  to  $5'$ , so, replication has to occur in one direction on the leading strand, but the other direction on the lagging strand. DNA polymerase can only attach bases to the  $5'$  primer end of a molecule on the leading strand.

DNA replication goes in the  $5'$  to  $3'$  direction because DNA polymerase acts on the  $3'-OH$  of the existing strand for adding free nucleotides.

In each duplication, the end of the chromosome is shortened (this is because the synthesis of Okazaki fragments requires RNA primer attaching a head on the lagging strand).

- DNA Replication - (1) conservative  
✓ (2) Semiconservative  
(3) Dispersive

Next day - Semiconservative