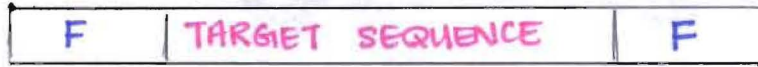


# POLYMERASE CHAIN REACTION DIAGRAM

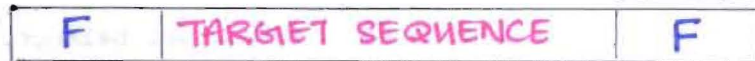
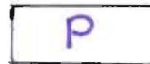
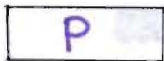
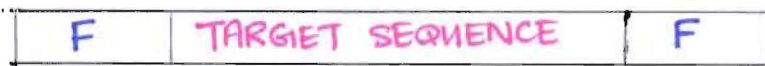
## FIRST CYCLE



F = FLANKING SEQUENCE



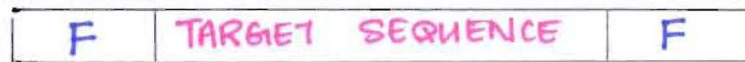
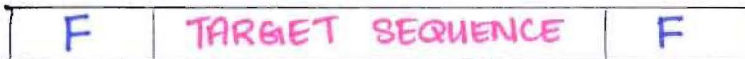
↓  
EXCESS PRIMERS  
ALL FOUR TYPES OF dNTPs  
HEAT STABLE DNA POLYMERASE  
HEAT TO SEPERATE THE STRANDS.



P = PRIMERS

STRAND SEPERATION  
DUE TO HEAT

PRIMERS HYBRIDIZE TO  
FLANKING SEQUENCE



TARGET SEQUENCE  
THE NEWLY SYNTHESIZED  
TARGET SEQUENCE  
F = NEWLY SYNTHESIZED  
FLANKING SEQUENCE

THESE 2 NEWLY SYNTHESIZED DNA  
STRANDS ARE LONGER THAN  
THE PARENT TEMPLATE.

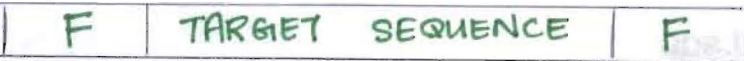
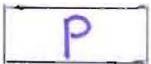
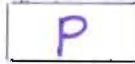
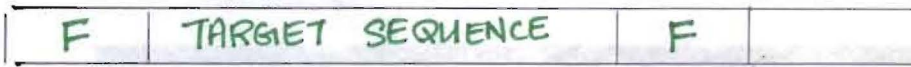
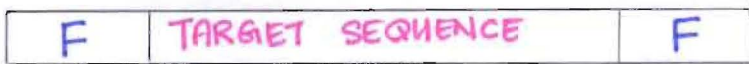
# POLYMERASE CHAIN REACTION (CON'D)

## SECOND CYCLE

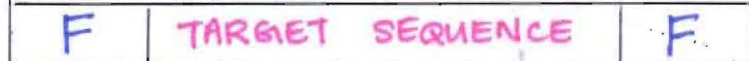
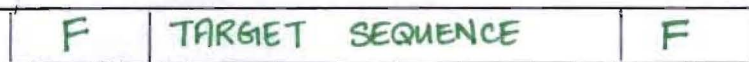
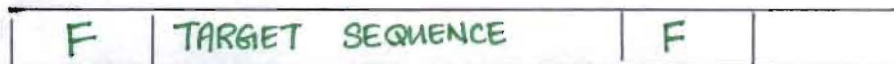
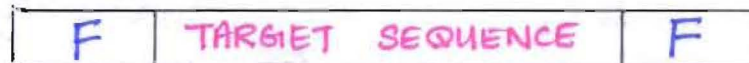
P = PRIMERS

F = ORIGINAL FLANKING SEQUENCE

F = SYNTHESIZED FLANKING SEQUENCE FROM 1<sup>ST</sup> CYCLE



DNA SYNTHESIS WITH THE HELP OF HEAT STABLE DNA POLYMERASE



NEWLY SYNTHESIZED SHORT STRAND TARGET SEQUENCE

# POLYMERASE CHAIN REACTION (CON'D)

## THIRD CYCLE



} NEWLY SYNTHESIZED  
SHORT STRAND  
AT THE END OF SECOND CYCLE

FROM THIS CYCLE FORWARD  
THESE SHORT STRAND OF TARGET SEQUENCE  
WILL BE REPLICATED EXPONENTIALLY.