

# CHAPTER - 11

## BIOTECHNOLOGY

### - PRINCIPLES AND PROCESS

#### **Cutting DNA at specific locations:**

R.E is incubated with DNA using optimum temperature results in cutting DNA into fragments.

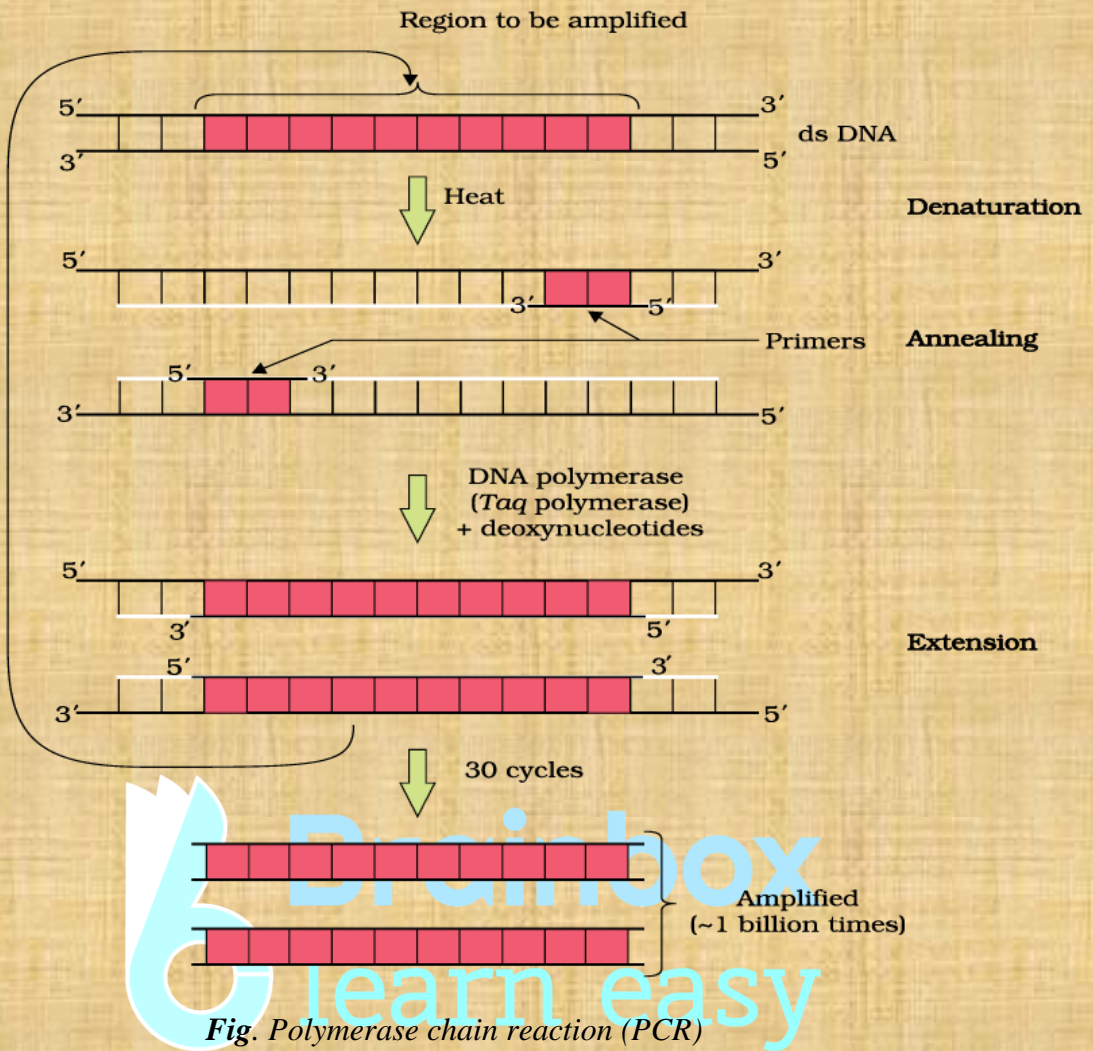
The fragments of DNA can be separated using Gel electrophoresis.

- Vector also fragmented using same R.E.
- Ligase enzyme is used to join DNA with vector.

Desired DNA fragment and vector forms Recombinant DNA.

#### **Amplification of Gene of interest using PCR (Polymerase Chain Reaction):**

PCR stands for polymerase chain reaction in this multiple copies of Gene of interest is synthesised in vitro using two sets of primers and taq polymerase enzyme.



*Fig. Polymerase chain reaction (PCR)*

### Insertion of Recombinant DNA into host:

If r-DNA contains Ampicillin resistance gene. E.coli bacteria can grow in Ampicillin medium but non-transformant will not grow.