

1. \* Biotechnology:-  
 The branch of biology that deals with the techniques of using micro-organisms or enzymes or cells to produce the products and processes useful to mankind and animals.

2. \* Genetic Engineering:-  
 It is the modern branch of biology which involves a technique to produce recombinant DNA by altering the chemistry of genetic engineering. When this technique is introduced into the host organisms, the organisms produce the desired product. It consists of deletion, deficiency, duplication, inversion etc.

3. \* Recombinant DNA:-  
 It is the technology which involves the combining of DNA from two different organisms and to generate a specific DNA known as recombinant DNA.

#### 4) Gene cloning and Gene transfer:

This process comes under the construction of the first recombinant DNA technology.

The process of replication of gene is done with the help of enzyme DNA polymerase and the process of production of multiple copies of antibiotic resistance is done under specific technique known as gene cloning.

For the process of gene cloning the following important steps are maintained -

- i) Identification of DNA with desirable genes.
- ii) Introduction of identified DNA into the host.
- iii) Maintenance of introduced DNA in the host and transfer of the DNA to its progeny.

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5) Origin of replication:-

The point from where the process of replication just starts is known as origin of replication. This is the point which is responsible for initiation of replication.

6) Plasmid :-

The autonomously replicating circular extra chromosomal DNA is known as plasmid. The plasmids are isolated from culture of E. coli

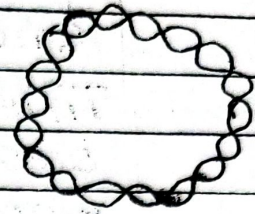
Ques:- Write short notes on recombinant DNA technology. fig no 11.2 Pg 197

Representation of recombinant DNA technology.

Ques.

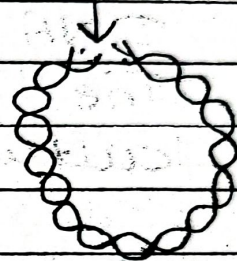


foreign DNA

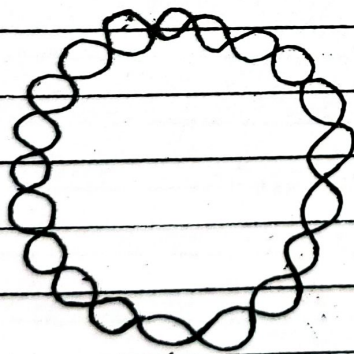


Vector DNA  
(Plasmid)

Same restriction enzyme cutting both foreign DNA and vector DNA at specific point.



ligases join foreign DNA to Plasmid



Transformation

E. coli



cell divides

