

Chapter – 9 | Biotechnology : Principles and Processes

QUIZ PART-01

1. Who coined the term “biotechnology”?

- A. Herbert Boyer
- B. Karl Ereky
- C. Stanley Cohen
- D. Louis Pasteur

(B)

Explanation : Karl Ereky coined the term “biotechnology” in 1919.

2. Modern biotechnology is mainly based on:

- A. Mutation and selection
- B. Hybridisation and fermentation
- C. Genetic and bioprocess engineering
- D. Cloning and fertilization

(C)

Explanation : Genetic engineering and bioprocess engineering are the two major principles of modern biotechnology.

3. Genetic engineering modifies:

- A. Genetic material
- B. Cell membrane
- C. Cytoplasm
- D. Cell wall

(A)

Explanation : Genetic engineering involves altering the chemical structure of DNA or RNA.

4. Bioprocess engineering requires a:

- A. Polluted environment
- B. Sterile environment
- C. Dry environment
- D. Natural environment

(B)

Explanation : A sterile environment prevents microbial contamination during product formation.

5. Traditional hybridisation may transfer:

- A. Only desired genes
- B. Only harmful genes
- C. No genes
- D. Undesirable genes with desired genes

(D)

Explanation : Traditional hybridisation may introduce unwanted genes along with the desired genes.

6. Which DNA sequence initiates replication?

- A. Origin of replication
- B. Antibiotic gene
- C. Foreign gene
- D. Recognition site

(A)

Explanation : The origin of replication allows the attached DNA to replicate inside the host.

7. The first artificial recombinant DNA was created by:

- A. Watson and Crick
- B. Cohen and Boyer
- C. Darwin and Wallace
- D. Jacob and Monod

(B)

Explanation : Stanley Cohen and Herbert Boyer constructed the first artificial recombinant DNA molecule in 1972.

8. A bacterial plasmid is generally:

- A. Linear RNA
- B. Circular extrachromosomal DNA
- C. Single-stranded protein
- D. A part of the cell wall

(B)

Explanation : A plasmid is circular, independently replicating DNA found outside the bacterial chromosome.

9. Which enzyme acts as “molecular scissors”?

- A. DNA ligase
- B. DNA polymerase
- C. Restriction enzyme
- D. RNA polymerase

(C)

Explanation : Restriction enzymes cut DNA at specific recognition sites.

10. Which enzyme joins two DNA fragments?

- A. DNA ligase
- B. Restriction enzyme
- C. Helicase
- D. Nuclease

(A)

Explanation : DNA ligase joins the cut ends of foreign DNA and vector DNA.