

Chapter – 9 | Biotechnology : Principles and Processes

QUIZ PART-02

1. The first restriction endonuclease identified was:
A. EcoRI
B. Hind-II
C. Hind-III
D. Taq-I (B)

Explanation : Hind-II was the first restriction enzyme identified. It was isolated from Haemophilus influenzae in 1968.

2. Restriction enzymes belong to which class of enzymes?
A. Ligases
B. Polymerases
C. Nucleases
D. Proteases (C)

Explanation : Restriction enzymes are a type of nuclease that cut DNA at specific sites.

3. The specific DNA sequence recognized by a restriction enzyme is called:
A. Vector
B. Recognition site
C. Origin of replication
D. Promoter (B)

Explanation : Restriction enzymes recognize specific nucleotide sequences called recognition sites.

4. EcoRI cuts DNA at which sequence?
A. GGATCC
B. GAATTC
C. GTCGAC
D. AAGCTT (B)

Explanation : EcoRI recognizes the palindromic sequence GAATTC and cuts between G and A.

5. The sticky ends produced by restriction enzymes help in:
A. DNA replication
B. Protein synthesis
C. Joining DNA fragments
D. RNA formation (C)

Explanation : Sticky ends allow complementary DNA fragments to pair and help DNA ligase join them.

6. Restriction endonucleases recognize:
A. Random DNA sequences
B. Specific palindromic nucleotide sequences
C. Only RNA sequences
D. Protein sequences (B)

Explanation : Restriction enzymes identify and cut specific palindromic DNA sequences.

7. The enzyme responsible for joining foreign DNA with vector DNA is:
A. DNA polymerase
B. DNA ligase
C. Restriction enzyme
D. Helicase (B)

Explanation : DNA ligase joins DNA fragments by forming bonds between them.

8. DNA fragments are separated by:
A. PCR
B. Gel electrophoresis
C. Transformation
D. Translation (B)

Explanation : Gel electrophoresis separates DNA fragments according to their size using an electric field.

9. In gel electrophoresis, DNA fragments move towards:
A. Cathode
B. Anode
C. Neutral point
D. Agarose surface (B)

Explanation : DNA is negatively charged, so it moves towards the positive electrode (anode).

10. The DNA bands in agarose gel are visualised after staining with:
A. Iodine
B. Ethidium bromide
C. Methylene blue
D. Safranin (B)

Explanation : Ethidium bromide staining followed by UV exposure helps visualize DNA fragments as bright bands.