

CBSE Class 12 Biology

Important Questions

Chapter 11

Biotechnology Principles and Processes

1 Marks Questions

1. A restriction enzyme digests DNA into fragments. Name the technique used to check the progression of this enzyme and separate DNA fragments.

Ans. Gel electrophoresis

2. Name two commonly used vectors in genetic engineering.

Ans. Plasmid and Bacteriophage.

3. Some enzymes are considered as molecular scissors. in genetic engenrring. What is the name assigned to such enzymes?

Ans. Restriction Enzymes.

4. Write conventional nomenclature of EcoRI.

Ans.E. Escherichia; co coli; R Name of Strain; I order in which enzyme isolated from strain of bacteria.

5. A linear DNA fragment and a plasmid has three restriction sites for EcoRIhow many fragments will be produced from linear DNA and plasmid respectively.

Ans.Number of fragments of linear DNA = 4

Number of fragments of plasmid = 3

6. An extra chromosomal segment of circular DNA of a bacterium is used to carry gene of interest into the host cell. What is the name given to it?

Ans. Plasmid.

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**7. Identify the recognition sites in the given sequences at which E.coli will be cut and make sticky ends.**

5´-GAATTC-3´

3´-CTTAAG-5´

Ans. 5 – G↓AATTC3

3 – CTTAA↑G5

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**8.Name the substance used as a medium in gel electrophoresis.**

Ans.Agarose

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**9.What is Bioconversion?**

Ans.Bioconversion refers to the process by which raw material are converted to specific product by microbial, plant or animal cell.

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**10.Name the bacterium that yields thermostable DNA polymerase.**

Ans.Thermusaquaticus.

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**11.Which enzymes are known as “molecular Scissors”?**

Ans.Restriction Endonuclease.

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**12.Name the commonly used vector for trans formation in plant cell?**

Ans.Agrobacterium tumefacien.

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**13.Name the technique used for amplification of DNA?**

Ans.Polymerase Chain Reaction.

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**14. Name the enzyme responsible for removal of 5 – phosphate group from nucleic acid?**

**Ans.** Alkaline Phosphates.

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**15. Who isolated Restriction enzymes for the first time?**

**Ans.** Warner Arber & Hamilton Smith.

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**16. Why do eukaryotic cells do not contain restriction enzymes?**

**Ans.** Because in eukaryotic cell, DNA is heavily methylated.

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**17. Why does DNA moves towards anode in gel electrophoresis.**

**Ans.** Because of presence of phosphate group, DNA is negatively charged & ∴ moves towards anode.

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