

**Chapter 11****BIOTECHNOLOGY: PRINCIPLES AND PROCESSES****1 mark each**

1. How is plasmid different from a plasmid?
2. What is the role of a vector in Genetic Engineering?
3. What is a recombinant DNA?
4. Why are restriction endonucleases called so?
5. Name one artificial plasmid.
6. What is the function of 'ori' in a vector?
7. What are bioreactors?
8. How are plasmids suitable for use as a vehicle DNA?
9. Why are Restriction Endonuclease synthesized in bacteria?
10. A small amount of DNA is recovered from a crime scene. Name the method that can be used to get multiple copies of this DNA.
11. Define a recombinant protein and give 1 example of such protein

**2 marks each**

1. How are restriction enzymes named?
2. List the methods of introducing DNA into a host cell.
3. What is recognition sequence? Give an example.
4. What are the features of a vector?
5. Give the role of matrix in electrophoresis. From where is it obtained
6. All vectors are plasmids but not all plasmids are vectors. Discuss.
7. Does recombination occur naturally? When?
8. Define and give the importance of Palindromes in genetic engineering.
9. Why is gene gun more frequently used in plant transformations?
10. What is the role of primers in PCR?
11. Discuss briefly downstream processing.

**3 marks each**

1. What is meant by Endonuclease and Exonuclease? How are they different?
2. Name the molecular scissors and molecular glue of a cell. What is the nature of these biomolecules?

3. Enlist the steps of recombinant DNA technology
4. Name a few lysing enzymes in biotechnology. What is their function?
5. What is the principle and use of PCR?
6. What does a competent cell mean? How can we make a cell competent?

**5 marks each**

- 1) Describe the technique of gel electrophoresis.
- 2) State true or false with reasons.
  - a. Eukaryotic cells have restriction enzymes.
  - b. *A. tumefaciens* causes plant tumors.
  - c. Plasmids are cDNA
  - d. Sticky ends have to be produced in both the plasmid and gene if rDNA is to be formed.
  - e. Genetic transfer is possible by the process of transformation.

