

# Biotechnology: Principles And Processes

GPLUS EDUCATION

## CHAPTER-11

1. Can you list 10 recombinant proteins which are used in medical practice? Find out where they are used as therapeutics (use the internet).
2. Make a chart (with diagrammatic representation) showing a restriction enzyme, the substrate DNA on which it acts, the site at which it cuts DNA and the product it produces.
3. From what you have learnt, can you tell whether enzymes are bigger or DNA is bigger in molecular size? How did you know?
4. What would be the molar concentration of human DNA in a human cell? Consult your teacher.
- \* 5. Do eukaryotic cells have restriction endonucleases? Justify your answer.
6. Besides better aeration and mixing properties, what other advantages do stirred tank bioreactors have over shake flasks?
7. Collect 5 examples of palindromic DNA sequences by consulting your teacher. Better try to create a palindromic sequence by following base-pair rules.
8. Can you recall meiosis and indicate at what stage a recombinant DNA is made?
9. Can you think and answer how a reporter enzyme can be used to monitor transformation of host cells by foreign DNA in addition to a selectable marker?
10. Describe briefly the followings:
  - \* (a) Origin of replication
  - \* (b) Bioreactors
  - \* (c) Downstream processing
11. Explain briefly
  - \* (a) PCR
  - \* (b) Restriction enzymes and DNA
  - \* (c) Chitinase
12. Discuss with your teacher and find out how to distinguish between
  - \* (a) Plasmid DNA and Chromosomal DNA
  - \* (b) RNA and DNA
  - \* (c) Exonuclease and Endonuclease