BIOLOGY

BOOKS - BETTER CHOICE PUBLICATION

PRINCIPLES AND PROCESSES IN BIOTECHNOLOGY

Very Short Answer Type Questions

1. Recalling meosis, indicate at what stage a recombinant DNA is made.

Watch Video Solution

2. What is Probe?

Watch Video Solution

3. What are exonucleases and endonucleases?

Watch Video Solution

4. Write one use of PCR technique.

Watch Video Solution

5. What is the meaning of vehicle in genetic engineering?

Watch Video Solution

6. Name the enzyme which is used to link DNA segments together.

Watch Video Solution

7. Give the full form of PCR. Who developed it?

Watch Video Solution

8. What are bioreactors?

Watch Video Solution

9. What are pallindromes?

Watch Video Solution

10. What is plasmid?

Watch Video Solution

11. Define passenger DNA.

Watch Video Solution

12. Name the enzyme used to link the sticky ends of DNA fragments.

Watch Video Solution

13. Name the enzyme used to dissolve bacterial cell wall.

Watch Video Solution

14. What is microinjection?

Watch Video Solution

15. What are recombinant proteins?

Watch Video Solution

16. What acts as a 'molecular scissors' in biotechnology?

Watch Video Solution

17. Describe briefly Downstream processing.

Watch Video Solution

18. Name a natural genetic engineer of plants.

View Text Solution

19. Name the technique used to separate DNA fragments.

Watch Video Solution

20. Name the enzyme that helps in linking fragments of DNA with vector.

Watch Video Solution

Very Short Answer Type Questions Most Expected Questions

1. Define biolistics.

View Text Solution

2. What is recognition site?

View Text Solution

3. Name two common types of cloning vectors.

Watch Video Solution

4. Which cloning vector was artificially constructed first time?

View Text Solution

5. Plasmid of which bacterium was used to construct first recombinant-DNA and

replicates inside host-cell.

View Text Solution

6. what are sticky ends? how are they formed?

Watch Video Solution

7. What is the role of alkaline phosphatase?

View Text Solution

8. Differentiate between Gene Cloning and Gene Therapy.

View Text Solution

9. What is elution?

View Text Solution

10. Why are restriction enzymes named so?

View Text Solution

Short Answer Type Questions

1. Name two source of Agar. List any four areas where agar is applied.

View Text Solution

2. Write any two problems associated with Genetic Engineering.

View Text Solution

3. Enlist two core techniques that have enabled birth of modern biotechnology.

View Text Solution

4. Besides better aeration and mixing properties, what other advantages do stirred tank bioreactors have over shake flasks?

Watch Video Solution

5. Distinguish Genomic library vs C-DNA library.

View Text Solution

6. What essential features must be present in a cloning vehicle?

View Text Solution

7. Write down the names of four tools required in recombinant DNA technology.

View Text Solution

8. What are restriction enzymes? What is their function?

View Text Solution

9. Write down four common steps in sequence in recombinant technology.

View Text Solution

10. What are bioreactors?

Watch Video Solution

11. How can you distinguish between plasmid DNA and chromosomal DNA?

View Text Solution

12. Distinguish between electroporation and micro-injection.

View Text Solution

13. Discuss with your teacher and find mil how to distinguish between : Exonuclcasc and Endonuclease

Watch Video Solution

14. Write any two uses of gene cloning.

View Text Solution

15. Write one use of PCR technique.

Watch Video Solution

16. Define genetic engineering. Name one natural genetic engineer of plants.

View Text Solution

17. What is embryonic stem cell technology? Name two animals which were produced by this technique.

View Text Solution

18. Explain briefly: PCR

Watch Video Solution

19. Define recombinant DNA technology. What is the function of restriction enzymes?

View Text Solution

20. What is plasmid DNA? Why plasmids are suitable for use in genetic engineering?

View Text Solution

21. Why E. coli in used as competent host in rDNA technology?

View Text Solution

22. How are restriction endonuclease enzymers are named? Write Example.

Watch Video Solution

23. The Agrobacterium is considered as Natural genetic engineer of plants. Comment.

View Text Solution

24. What are the basic requirements of PCR technique.

View Text Solution

25. Write a short note on down streaming process.

View Text Solution

26. Distinguish between Blunt ends and Sticky ends produced by restriction enzymes with examples.

View Text Solution

27. Which enzymes are used to isolate genetic material (DNA) in bacteria and plant Cell?

View Text Solution

28. What do you mean by 'Golden rice' ?

Watch Video Solution

29. What is Gene cloning? What are its advantages?

View Text Solution

30. In plants, how is alien DNA introduced into host cell?

Watch Video Solution

31. What is the importance of Plant tissue culture and Biotechnology?

View Text Solution

32. What are the advantages and probable risks of Genetic engineering?

View Text Solution

33. Describe briefly Downstream processing.

Watch Video Solution

34. What is 'Golden rice'? How it can prevent child blindness?

Watch Video Solution

35. Expand PCR.

Watch Video Solution

36. Explain bioreactors.

View Text Solution

37. Write a brief account of enzymes involved in recombinant DNA technology.

Restriction enzymes (Molecular Scissors)

View Text Solution

38. Write a brief account of enzymes involved in recombinant DNA technology.

DNA Ligase

View Text Solution

39. Write a brief account of enzymes involved in recombinant DNA technology.

Alkaline Phophatase

View Text Solution

40. Write a brief account of enzymes involved in recombinant DNA technology.

DNA Polymerase

View Text Solution

41. What are molecular scissors? Explain their role.

Watch Video Solution

42. Define Biotechnology. Explain two most important principles of biotechnology.

View Text Solution

43. List the step involved in recombinant DNA technology.

Watch Video Solution

44. Why gene cloning is done in mammals? Give three reasons.

View Text Solution

45. What is gene cloning? Write its one use.

View Text Solution

46. What are restriction enzymes? Name any two types. How are they important in recombinant DNA technology?

View Text Solution

47. What does PCR stand for? What is the principle of PCR? What are its basic requirements?

View Text Solution

48. What are the important features of cloning vehicle?

View Text Solution

49. Explain brifly the shot-gun method of introducing alien DNA in host cell.

View Text Solution

50. Define genetic engineering. Write applications of genetic engineering

Watch Video Solution

51. What is PCR? Write its advantages.

View Text Solution

52. Explain any three methods of vectorless gene transfer.

Watch Video Solution

53. Define recombinant DNA technology. List various steps involved in recombinant DNA technology.

View Text Solution

54. Why eukaryotic cells do not have restriction endonucleases.

View Text Solution

Short Answer Type Questions Most Expected Questions

1. How have transgenic animals proved to be benefical in:

Production of biological products

 Watch Video Solution

2. How have transgenic animals proved to be benefical in:

Chemical safety testing.

Watch Video Solution

3. How is Agrobacterium tumefaciens able to transform a normal plant cell into a tumour?

View Text Solution

4. Name the enzyme which is generally used in PCR? What is the source of this enzyme?

View Text Solution

5. What are bacteriophage vectors? Name the two phage vectors that are commonly used.

View Text Solution

6. Before integrating DNA with bacterial plasmid, Bacteria cells are treated with calcium.

Watch Video Solution

7. Name the source or organism from which Ti plasmid is isolated. Explain the use of this plasmid in biotechnology.

View Text Solution

8. Mention critical research areas of biotechnology?

View Text Solution

9. Mention the type of host cells suitable for the gene guns to introduce an alien DNA.

View Text Solution

10. Can you think and answer how a reporter enzymes can be used to monitor transformation of host cells by foreign DNA in addition to selectable marker?

View Text Solution

11. How and why is the bacterium Thermus aquatics employed in recombinant DNA technology? Explain.

Watch Video Solution

12. Highlight the difference between a flask in your laboratory and a bioreactor which allows cells to grow in a continuous culture system.

View Text Solution

13. Fill in the blank

During gel electrophoresis DNA fragments move to .....

Watch Video Solution

14. Fill in the blank

DNA fragments are stained with .....

View Text Solution

15. Fill in the blank

Stained fragments are exposed to .....

View Text Solution

16. Fill in the blank

Fragments are extruded from gel piece. This is known as .....

View Text Solution

Short Answer Type Questions Most Expected Questions

1. How DNA fragments are isolated and purified to be used in recombinant DNA ?

View Text Solution

2. A recombinant vector with a gene of interest inserted within the gene of a galactosidase enzyme, is introduced into a bacterium. Explain the method that would

help in selection of recombinant colonies from non-recombinant ones.

View Text Solution

3. Why is this method of selection referred to as "insertional inactivation" ?

View Text Solution

4. Explain the work carried out by Cohen and Boyer that contributed immensely in

biotechnology.

View Text Solution

5. Why are engineered vectors preferred by biotechnologists for transferring the desired genes into another organism ?

View Text Solution

6. Explain how do "ori","selectable markers" and "cloning sites" facilitate cloning into a vector.

View Text Solution

7. Identify the selectable markers in the diagram of E. coli vector shown above.

View Text Solution

8. How is the coding sequence of α-galactosidase considered a better marker than the ones identified by you in the diagram? Explain.

View Text Solution

Long Answer Type Questions

1. What is recombinant DNA technology? Explain in brief the various steps in the process of recombinant DNA technology.

View Text Solution

2. What are molecular scissors ? Explain its three types. Discuss its significance also.

View Text Solution

3. Define recombinant DNA technology. Describe the various tools required for rDNA technology.

View Text Solution

4. What is cloning vector? Discuss the various types of cloning vehicles involved in genetic engineering.

View Text Solution

5. Give a brief historical background of genetic engineering.

View Text Solution

6. Mention the role of vectors in recombinant DNA technology.

View Text Solution

7. With the help of a diagrammatic representation show only the steps of recombinant DNA technology.

View Text Solution

8. Explain the different steps involved in the formation of recombinant DNA by the action of Eco RI.

View Text Solution

9. What is EcoRI ? What does 'R' represent in this?

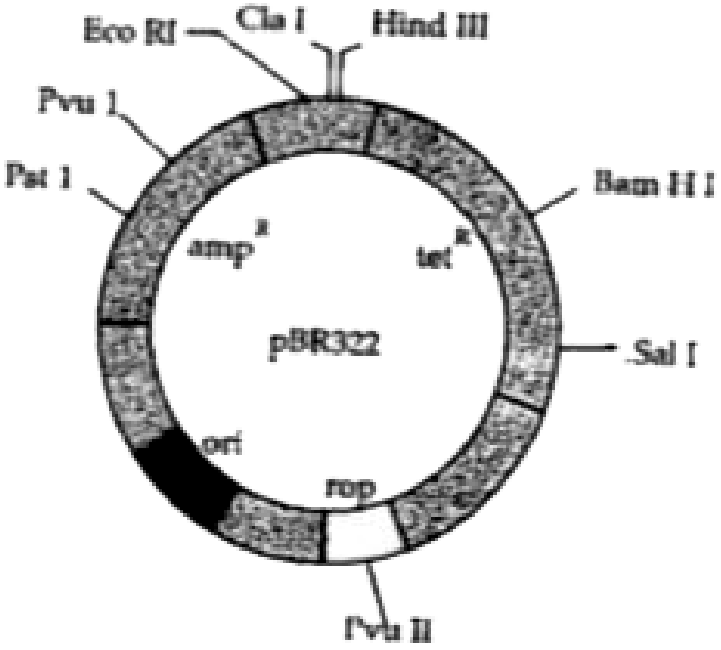
View Text Solution

10. Give the palindromic nucleotide sequence recognised by it.

View Text Solution

11. Explain its action.

View Text Solution



12.

(i) Name the organism in which the vector shown isTnserted to get the copies of the desired gene.

(ii) Mention the area labelled in the vector

responsible for controlling the copy number of the inserted gene.

(iii) Name and explain the role of a selectable marker in the vector shown.

View Text Solution

13. What is selectable marker? Explain it by taking any example.

View Text Solution

14. Explain the steps involved in PCR technique with reference to the change in each step and show diagrammatically.

View Text Solution

15. 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.

Watch Video Solution

16. For selection of recombinants, insertional inactivation of antibiotic marker has been superseded by insertional inactivation of a marker gene coding for a chromogenic substrate. Give reasons.

Watch Video Solution