



BIOLOGY

BOOKS - USHA BIOLOGY (ODIA ENGLISH)

BIOTECHNOLOGY & ITS APPLICATIONS

Exercise

1. Which of the following enzymes are absolutely necessary for recombinant DNA

technology ?



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2. The usual source of restriction endonuclease used in gene cloning is

A. Fungi

B. Bacteria

C. Plants

D. Viruses

Answer:



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3. Which of the following is produced by genetical engineered bacteria ?

A. Thyroxine

B. Insulin

C. Glucagon

D. ADH

Answer:



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4. Which one of the following bacteria is used for production of transgenic plants ?

- A. Escherichia coli
- B. Bacillus thuringiensis
- C. Staphylococcus aureus
- D. Agrobacterium tumefaciens

Answer:



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5. A gene whose expression helps to identify transformed cell is known as_____.

A. Vector

B. Plasmid

C. Strurtural gene

D. Selectable marker

Answer:



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6. Enzyme complex responsible for alcoholic fermentation by yeast.

A. Amylase

B. Galactase

C. Zymase

D. Invertase

Answer:



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7. Golden rice - a transgenic variety of rice are principally richer than normal rice in:

A. beta carotene

B. Lysine

C. Vitamine - C

D. Iron

Answer:



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8. Which of the following is molecular scissor ?

A. Restriction endonuclease

B. Helicase

C. Urease

D. Peptidase

Answer:



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9. Which of the following has been covered under the broad patent category ?

- A. Triticum
- B. Oryza
- C. PisumSativum
- D. Brassica

Answer:



10. Biolistic (gene gun) technique is used in _____.

- A. Tissue culture process
- B. Gene transfer process
- C. Hybridization process
- D. Germplasm conservation

Answer:



11. Basic principle of developing transgenic plants and animals is to introduce the gene of interest into the nucleus of _____.

- A. Somatic cell
- B. Vegetative cell
- C. Germ cell
- D. Body cell

Answer:



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12. The gene that encodes for- BT protein specific to cotton bollwooni is _____

A. Cry I Ac

B. Cry II Abc

C. Cry II.Ac

D. Cry 11 Ab

Answer:



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13. The science of engineering and technology which is applied to life sciences is _____

- A. Biotechnology
- B. Biological science
- C. Genetic engineering
- D. Pathology

Answer:



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14. The enzymes which are commonly used in genetic engineering are _____

A. Endonuclease and ligase

B. Restriction endonuclease & Polymerase

C. Ligase and Polymerase

D. Restriction endonuclease and ligase

Answer:



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15. The process of separation & purification of expressed protein before marketing is called_____

A. Down Stream Processing.

B. Bio Processing.

C. Post Production Processing.

D. Upstream Processing.

Answer:



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16. The DNA fragments separated on an agarose gel can be visualised after staining with ---

- A. Acetocaramine
- B. Aniline blue
- C. Ethidium
- D. Bromophenoe Blue

Answer:



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17. The thermostable enzymes, 'Taq' & 'P&U' isolated from thermophilic bacteria are _____

- A. RNA Polymerases
- B. DNA Polymerases
- C. Restriction endonucleases
- D. DNA ligases

Answer:



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18. Which of the following are used in gene cloning ?

A. Nucleoids

B. Plasmids

C. Mesosomes

D. None of these

Answer:



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19. In genetic engineering, the terms vector is applied for :

- A. Plasmids
- B. Sources of DNA
- C. Active viruses
- D. All of these

Answer:



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20. The first hormone artificially produced by culturing bacteria is ----.

- A. Insulin
- B. Thyroxin
- C. Testosterone
- D. Adrenalin

Answer:



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21. An analytical technique that is used in solving paternity dispute based on DNA polymorphism is called _____

- A. DNA sequencing
- B. Cloning
- C. DNA Fingerprinting
- D. Cell culture

Answer:



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22. Which one of the following bacteria has found extensive use in genetic engineering work in plants?

A. *Clostridium septicum*

B. *Xanthomonas citri*

C. *Bacillus coagulans*

D. *Agrobacterium tumefaciens*

Answer:



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23. Which of the following algae has nitrogen fixing ability ?

A. Vaucheria

B. Ectocarpus

C. Fucus

D. Nostoc

Answer:



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24. Which artificial cloning vector was constructed by Boliver and Rodriguez in 1977 ?



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25. Separation of two strands of DNA on heating is called what ?



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26. What is the first transgenic cow ?



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27. Who is called as the Father of Genetic Engineering ?



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28. Which enzyme is used to synthesize the DE 'A by using m-RNA as a template.



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29. Who discovered the plasmid vectors ?



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30. By which process a cell takes up naked DNA fragment from the environment for recombination. ?



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31. Which vitamin is present in Golden Rice ?



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32. Which scientist first time isolated restriction endonuclease from Bacteria ?



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33. Who first invented PCR technique ?



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34. Which type of restriction endonuclease takes part in r-DNA technology ?



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35. Which department of the Govt. of India is the nodal centre for Indian- biosafety network ?



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36. Which chain of Insulin is removed during its maturation ?



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37. Which enzyme helps in the joining of DNA fragments ?



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38. Which blotting technique is used for the separation of DNA ?



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39. The name of toxic protein produced by *Bacillus thuringiensis* is _____.



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40. Restriction endonucleases are enzymes that cut a _____ molecule at a particular place.



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41. Which artificial cloning vector was constructed by Boliver and Rodriguez in 1977 ?



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42. Separation of two strands of DNA on heating is called what ?



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43. Fill in the blanks with the correct answer(s): The transgenic mouse is called as ____.



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44. Fill in the blanks with the correct answer(s): Genetically engineered rice rich in vitamin A is known as ____.



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45. Fill up the blanks with correct answer : DNA used as a carrier for transferring a fragment of foreign DNA into a suitable host is called ____.



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46. Synthetic DNA is synthesized with the help of enzyme _____ on DNA template.



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47. The organisms in which foreign genes have been introduced by genetic engineering are called _____.



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48. Bt toxin genes are isolated from a bacterium called _____ and incorporated into several crop plants.



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49. The grain of golden rice is yellow in colour due to presence of _____.



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50. Cutting and rejoining the DNA sequence for r-DNA technology is known as _____.



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51. Differentiate between the Plasmid and Chromosomal DNA.



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52. Difference between: YAC and BAC.



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53. Differentiate between : Ex Vivo gene therapy and in Vivo gene therapy.



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54. Difference between: DNA and c-DNA.



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55. Discuss with your teacher and find out how to distinguish between Exonuclease and endonuclease



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56. What do you mean by plasmid ?



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57. What is polymerase chain reaction



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58. Write note on : Complementary DNA (cDNA).



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59. What is selectable marker? What is its use in genetic engineering ?



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60. What are the essential features for an ideal cloning vehicle/vector ?



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61. How could multiple copies of a given fragment of DNA be produced ?



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62. What are the steps involved in production of genetically engineered human insulin ?



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63. Write note on vaccines.



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64. Write notes on: What do you mean by gene therapy?



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65. What are the steps involved in producing transgenic animals ?



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66. Write notes on: Biopatent



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67. Write note on Bt-Crops.



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68. What do you mean by genetically modified organism (GMO) and its applications in agriculture. [2018(A)]



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69. What is pallindroinic nucleotide sequence?



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70. Applications of Recombinant DNA technology or genetic engineering.



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71. What are the bioethical issues pertaining to biotechnology ?



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72. What are restriction endonucleases ?

Mention their functions in recombinant DNA technology.



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73. What are the important steps in recombinant DNA technology ?



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74. What is meant by transgenic animal ?



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75. Biopiracy.



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76. What are cloning vectors ?



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