



BIOLOGY

BOOKS - VIKRAM PUBLICATION (ANDHRA PUBLICATION)

BIOTECHNOLOGY : PRINCIPLES AND PROCESSES

Very Short Answer Question

1. The critical research area of biotechnology are



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2. What are molecular scissors ? Where are they obtained from?



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3. Plasmids



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4. What is E CORI ? How does it function ?



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5. What are cloning vectors ? Give an example.



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6. Who produced first recombinant DNA molecule?



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7. Select a palindrome sequence from the following



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8. PCR technique is used in



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9. Which of the following is not a component of downstream processing?



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10. How does one visualize DNA on an agar - gel ?



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11. How can you differentiate between exonucleases and endonucleases ?



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Short Answer Question

1. Type - II restriction enzymes



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2. A gene which hides the action of another gene is termed as



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3. What is the function of moderator in a nuclear reactor ?



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4. What are the different methods of contraception?



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Long Answer Question

1. Vaccine of which STD is produced through recombinant DNA technology for its prevention?



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2. Identify the tools of r-DNA technology



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Exercise

1. Do eukaryotic cells have restriction endonucleases? Justify your answer.



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



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3. Can you recall meiosis and indicate at what stage a recombinant DNA is made?



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4. Describe briefly the followings:

(a) Origin of replication

(b) Bioreactors

(c) Downstream processing



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5. Describe briefly the followings:

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6. Describe briefly the followings:

(a) Origin of replication

(b) Bioreactors

(c) Downstream processing



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7. Explain briefly

(a) PCR

(b) Restriction enzymes and DNA

(c) Chitinase



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8. Explain briefly

(a) PCR

(b) Restriction enzymes and DNA

(c) Chitinase



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9. Explain briefly

(a) PCR

(b) Restriction enzymes and DNA

(c) Chitinase



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10. 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



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11. Discuss with your teacher and find out how to distinguish between

(a) Plasmid DNA and Chromosomal DNA

(b) RNA and DNA

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12. Discuss with your teacher and find out how to distinguish between

(a) Plasmid DNA and Chromosomal DNA

(b) RNA and DNA

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13. What does 'H' in 'd' and III refer to in the enzyme Hind III ?



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14. Which of the following is a cloning vector?



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15. What type of energy transformation take place in electric generator?



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16. What is the significance of adding proteases at the time of Isolation of Genetic

material (DNA)?



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17. While doing a PCR, 'denaturation' step is missed. What will be its effect on the process ?



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18. Which of the following is a cloning vector?



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19. Enzyme used in gene cloning is



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20. Decide the ratio between ester bonds and hydrogen bonds that are broken in each palindromic sequence of DNA when treated with EcoRI during the formation of sticky ends



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1. Two genes A and B are linked in a dihybrid cross involving these two genes, the F_1 heterozygote is crossed with homozygous recessive parental type (aa bb). What would be the ratio of offspring in the next generation?



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2. Who had proposed the chromosomal theory of the inheritance?



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3. When true breeding yellow wrinkled seeded pea plant is crossed to true breeding green round seeded pea plant the progeny will be



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4. Define and terms phenotype and genotype.



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5. What is point mutation? Give one example.



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6. The genotype of a dominant phenotype



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7. Differentiate between the following -

(a) Dominance and Recessive (b) Homozygous

and Hetrozygous

(c) Monohybrid and Dihybrid.



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8. What are the differences between homozygous and heterozygous?



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9. A dihybrid test cross ratio for two completely linked genes will be



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10. Write a brief note on chromosomal mutations and gene mutations



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11. State the law of independent assortment.



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12. Write about dihybrid cross with the help of checker board?



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