BIOLOGY

BOOKS - KUMAR PRAKASHAN KENDRA BIOLOGY (GUJRATI ENGLISH)

BIOTECHNOLOGY : PRINCIPLES AND PROCESSES

Section A Exam Oriented Questions Answers From Darpan

1. Give general information about Biotechnology.

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2. Mention responsible methods for the development of modern biotechnology.

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3. How is Genetic Engineering better than hybridization ?

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4. Give importance of origin of replication in chromosome.

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5. Give general information about origin of recombinant DNA molecule.

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6. Mention main phases included in recombinant DNA technology.

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7. Explain restriction enzymes and their nomenclature.

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8. Give types and functions of Nuclease Enzyme.

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9. Give the method for separation and isolation of DNA fragments.

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10. Mention the features that are required to facilitate cloning into a vector.

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11. Give the various methods to make bacteria a competent host.

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12. Which steps are included in recombinant DNA technology mechanism ?

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13. Give the method for isolation of genetic material DNA.

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14. Explain cutting of DNA.

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15. Explain how synthesis of gene of interest is done by use of PCR ?

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16. Explain about PCR in short.

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17. Explain how recombinant DNA is entered into host cell or in living organism ?

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18. How recombinant protein can be obtained ?

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19. Give information about bioreactors.

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20. Explain downstream processing.

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Section B Difference Scientific Reasons

1. Give differences

Restriction Endonuclease and Restriction Exonuclease

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2. Give differences

PCR and plasmid

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3. Give Scientific reasons

In recombinant DNA technology the use of endonuclease is more proper than exonuclease.

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4. Give Scientific reasons

Genetic engineering is better than hybridization.

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5. Give Scientific reasons

The products prepared by recombinant DNA have to be passed from downstream processing.

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Section C Objective Questions Answers

1. Match the columns

Column - I		Column - II	
(a)	Ligase	(i)	It removes nucleotide from DNA end.
(b)	Endonuclease	(ii)	Connects parts of DNA
(c)	Exonuclease	(iii)	Removes phosphates of DNA
(d)	DNA Polymerase	(iv)	It produces sticky ends in DNA
		(v)	Useful to get repeated amplification

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2. Match the columns

Column - I		Column - II	
(a)	Ethidium Bromide	(i)	Agrobacterium
(b)	Ti plasmid	(ii)	Tetracycline
(c)	Pvu I	(iii)	Gel electrophoresis
		(iv)	Ampicilin

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3. Match the columns

Column - I		Column - II	
(a)	Lysozyme	(i)	Fat
(b)	Cellulase	(ii)	Protein
(c)	Chitinase	(iii)	Bacteria
(d)	Lipase	(iv)	Penicilium
		(v)	Mengifera indica

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4. Definitions/Explanation

Cloning :

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5. Definitions/Explanation

Elution :

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6. Definitions/Explanation

Insertional Inactivation :

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Section D Textual Exercise

1. Can you list 10 recombinant proteins which are used in medical practice ? Find out where they are used as therapeutics (use the internet).

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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.

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3. From what you have learnt, can you tell whether enzymes are bigger or DNA is bigger in molecular size ? How did you know ?

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4. What would be the molar concentration of human DNA in a human cell ? Consult your teacher.

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

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

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7. Collect 5 examples of palindromic DNA sequences by consulting your teacher. Better try to create a palindromic sequence by following base-pair rules.

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

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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 ?

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10. Explain briefly

(b) Restriction enzymes and DNA

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11. Explain briefly

(c) Chitinase

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

(a) Plasmid DNA and Chromosomal DNA

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

(b) RNA and DNA

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Section E Solution Of Ncert Exemplar Multiple Choice Questions Mcqs

1. Rising of dough is due to

A. Multiplication of yeast

B. Production of CO_2

C. Emulsification

D. Hydrolysis of wheat flour starch into sugars.

Answer: B

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2. Which of the following enzymes catalysing the removal of nucleotides from the ends of DNA ?

A. Endonuclease

B. Exonuclease

C. DNA ligase

D. Hind - II

Answer: B

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3. The transfer of genetic material from one bacterium to another through the mediation of a viral vector is termed as

A. Transduction

B. Conjugation

C. Transformation

D. Translation

Answer: A

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4. Which of the given statement is correct in the context of visualizing DNA separated by agarose gel electrophoresis ?

A. DNA can be seen in visible light

B. DNA can be seen without staining in visible light

C. Ethidium bromide stained DNA can be seen in visible light

D. Ethidium bromide stained DNA can be seen under exposure to UV light

Answer: D

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5. 'Restriction' in restriction enzyme refers to

A. Cleaving of phosphodiester bond in DNA by the enzyme

B. Cutting of DNA at specific position only

C. Prevention of the multiplication of bacteriophage by the host bacteria

D. All of the above

Answer: B

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6. Which of the following is not required in the preparation of recombinant DNA molecule ?

A. Restriction endonuclease

B. DNA ligase

C. DNA fragments

D. E. coli

Answer: D

View Text Solution

7. In agarose gel electrophoresis, DNA molecules are separated on the basis of their

A. Charge only

B. Size only

C. Charge to size ratio

D. All of the above

Answer: B

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8. The most important feature in a plasmid to serve as a vector in gene cloning experiment is:

A. Origin of replication (ori)

B. Presence of a selectable marker

C. Presence of sites for restriction endonuclease

D. Its size

Answer: A

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9. While isolating DNA from bacteria, which of the following enzymes is not required ?

A. Lysozyme

B. Ribonuclease

C. Deoxyribonuclease

D. Protease

Answer: C

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10. Which of the following has popularising the PCR (polymerase chain reactions) ?

A. Easy availability of DNA template

B. Availability of synthetic primers

C. Availability of cheap deoxyribonucleotides

D. Availability of 'Thermostable' DNA polymerase

Answer: D

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11. An antibiotic resistance gene in a vector usually helps in the selection of

A. Competent bacterial cells

B. Transformed bacterial cells

C. Recombinant bacterial cells

D. None of the above

Answer: B

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12. Significance of 'heat shock' method in bacterial transformation is to facilitate

A. Binding of DNA to the cell wall

B. Uptake of DNA through membrane transport proteins

C. Uptake of DNA through transient pores in the bacterial cell wall

D. Expression of antibiotic resistance gene

Answer: C

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13. The role of DNA ligase in the construction of a recombinant DNA molecule is

A. Formation of phosphodiester bond between two DNA fragments

B. Formation of hydrogen bonds between sticky ends of DNA fragments

C. Ligation of all purine and pyrimidine bases

D. None of the above

Answer: A

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14. Which of the following is not a source of restriction endonuclease ?

A. Haemophilus influenza

B. Escherichia coli

C. Agrobacterium tumefaciens

D. Bacillius amyloli

Answer: C

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15. Which of the following steps are catalysed by Taq DNA polymerase in a PCR reaction ?

A. Denaturation of template DNA

B. Annealing of primers to template DNA

C. Extension of primer end on the template DNA

D. All of the above

Answer: C

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16. A bacterial cell was transformed with a recombinant DNA molecule that was generated using a human gene. However, the

transformed cells did not produce the desired protein. Reasons could be

A. Human gene may have intron which bacteria cannot process

B. Amino acid codons for humans and bacteria are different

C. Human protein is formed but degraded by bacteria

D. All of the above.

Answer: A

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17. Which of the following should be chosen for best yield if one were to produce a recombinant protein in large amounts ?

A. Laboratory flask of largest capacity

B. A stirred-tank bioreactor without inlets and outlets

C. A continuous culture system

D. Any of the above

Answer: C

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18. Who among the following was awarded the Nobel Prize for the development of PCR technique ?

A. Herbert Boyer

B. Hargovind Khurana

C. Arthur Kornberg

D. Kary Mullis

Answer: C

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19. Which of the following statements does not hold true for restriction enzyme ?

A. It recognises a palindromic nucleotide sequence

B. It is an endonuclease

C. It can is isolated from viruses

D. It produces the same kind of sticky ends in different DNA molecules

Answer: C

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Section E Solution Of Ncert Exemplar Very Short Answer Type Questions Vsqs

1. How is copy number of the plasmid vector related to yield of recombinant protein ?

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2. Would you choose an exonuclease while producing a recombinant DNA molecule ?

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

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4. Restriction enzymes should not have more than one site of action in the cloning site of a vector. Comment.

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5. What does 'competent' refer to in competent cells used in transformation experiments ?

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6. What is the significance of adding proteases at the time of isolation of genetic material (DNA) ?

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

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8. Name a recombinant vaccine that is currently (8 being used in vaccination program.

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9. Do biomolecules (DNA, protein) exhibit biological activity in anhydrous conditions ?

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10. What modification is done on the Ti plasmid of Agrobacterium tumefaciens to convert it into a cloning vector ?

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Section E Solution Of Ncert Exemplar Short Answer Type Questions

1. What is meant by gene cloning ?

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2. Both a wine maker and a molecular biologist who had developed a recombinant vaccine claim to be biotechnologists. Who in your opinion is correct ?

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3. A recombinant DNA molecule was created by ligating a gene to a plasmid vector. By mistake, an exonuclease was added to the tube containing the recombinant DNA. How does

this affect the next step in the experiment, i.e. bacterial transformation ?

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4. A plasmid DNA and a linear DNA (both are of the same size) have one site for a restriction endonuclease. When cut and separated on agarose gel electrophoresis, plasmid shows one DNA band while linear DNA shows two fragments. Explain.

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5. How does one visualise DNA on an agarose gel ?

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6. A plasmid without a selectable marker was chosen as vector for cloning a gene. How does this affect the experiment ?

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7. A. mixture electrophoresed in an agarose gel. After staining of fragmented DNA was the gel with ethidium bromide, no DNA bands were observed. What could be the reason ?

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8. Describe the role of $CaCl_2$ in the preparation of competent cells.

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9. What would happen when one grows a recombinant bacterium in a bioreactor but forget to add antibiotic to the medium in which the recombinant is growing ?

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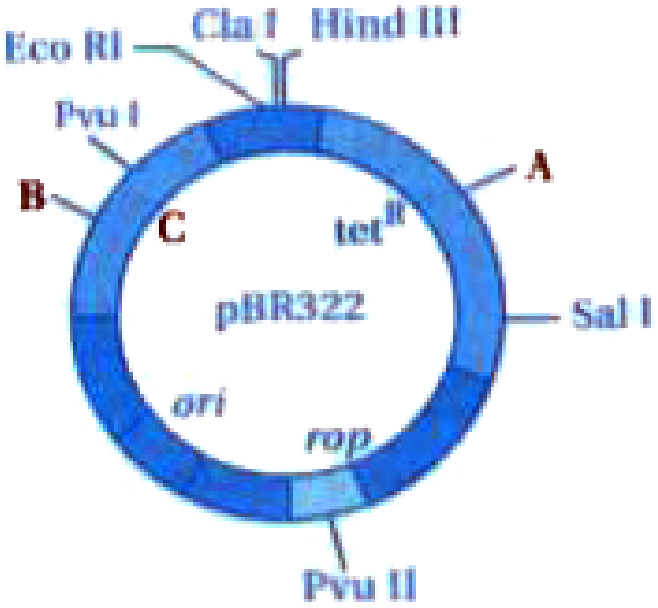
10. Name the regions marked A, B and C.



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Section E Solution Of Ncert Exemplar Long Answer Type Questions

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

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2. Describe the role of Agrobacterium tumefaciens in transforming a plant cell.

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

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Section F Multiple Choice Questions Mcqs

1. A specific sequence which begins the replication of DNA is called .....

A. Sequence of replication

B. Point of replication

C. Origin of replication

D. None of the above

Answer: C

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2. Which plasmid of Agrobacterium tumefaciens is responsible for forming tumor cell ?

A. Mi

B. Ti

C. Te

D. ET

Answer: B

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3. When virus is used as vectors which word is used ?

A. transformation

B. synthesis

C. transduction

D. Analysis

Answer: C

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4. The molecule of DNA is transferred towards which electric charge ?

A. Neutral

B. Positive and Negative

C. Negative

D. Positive

Answer: D

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5. What is indicated by R in ECORI ?

A. Name of strain

B. Location of gene

C. Roman Numeral

D. Name of species

Answer: A

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6. Which of the following methods is used to pre- pare competent host ?

A. Electrophoresis

B. Gene gun

C. micro-injection

D. All of the above

Answer: D

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7. Which enzyme is used to remove phosphate group from DNA ?

A. RNASe H

B. Alkaline phosphatase

C. Terminal transferaze

D. Hind-III

Answer: B

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8. What temperature is kept during denaturization ?

A. $90 - 95^{\circ} C$

B. $80 - 85^{\circ} C$C

C. $100 - 110^{\circ} C$

D. $75 - 80^{\circ} C$

Answer: A

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9. Which enzyme is used in bacteria to break the membrane ?

A. Cellulase

B. Lipase

C. Lysozyme

D. Chitinase

Answer: C

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10. Which of the following is not the restriction en-zyme ?

A. Puv-1

B. Cla-1

C. Hind-III

D. Sal-I

Answer: A

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11. Gene at the site of Bam H1 restriction enzyme in PBR322.

A. Ampicillin antibiotic resistance site

B. Tetracycline antibiotic resistance site

C. ori place

D. rop place

Answer: B

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12. Which of the following is not a characteristic of plasmid ?

A. Circular structure

B. Transformation capacity

C. Single stranded

D. Independent replication

Answer: C

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13. By which method DNA fragments that are cut by restriction enzyme are separated ?

A. Centrifugation

B. Electrophoresis

C. Polymerase chain reaction

D. Enzymatic measurement

Answer: B

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14. Why is foreign DNA cannot pass through cell membrane ?

A. It is hydrophobic

B. It is hydrophilic

C. It is full of protein

D. It is large in size

Answer: B

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15. From what isolation of Agarose is done ?

A. Sea weed/Marine weed

B. Blue green algae

C. Afrada

D. Sargasam

Answer: A

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16. How many chain/sequences of DNA molecule are broken when restriction endonuclease enzyme works on palindrome ?

A. 2

B. 4

C. 6

D. 8

Answer: A

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17. Separate DNA : Restriction Endonuclease : Connects DNA

A. Protease

B. Lipase

C. Nuclease

D. Ligase

Answer: D

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18. By whom the recombinant DNA was prepared for the first time ?

A. Stanle Cohen

B. Herbert Boyer

C. Tamin and Baltimore

D. (A) & (B)

Answer: D

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19. What is known as 'gene taxi' ?

A. Vaccine

B. Plasmid

C. Bacteria

D. Protozoa

Answer: B

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20. DNA can be cut with the help of

A. DNAase

B. RNAase

C. knife

D. Restriction enzyme

Answer: D

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21. HIND-II recognises a specific sequence of how many base pairs ?

A. 3

B. 10

C. 6

D. 8

Answer: C

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22. In EcoRI, 'R' stands for

A. Genus

B. Species

C. Strain

D. Restriction enzyme

Answer: C

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23. Biotechnolgy mainly uses

A. GMO

B. Bacteria

C. Virus

D. Animals

Answer: A

View Text Solution

24. Following can be biotechnological products

A. Antibiotics

B. Vaccine

C. Enzymes

D. All of these

Answer: D

View Text Solution

25. Multiplication of alien DNA in organism requires

A. rop

B. ori

C. Stop codons

D. TATA box

Answer: B

View Text Solution

26. Restriction enzyme breaks

A. Glycosidic bond

B. H-bond

C. Sugar-Phosphate linkage

D. All of these

Answer: C

View Text Solution

27. The extraction of DNA from gel is called as

A. Spooling

B. Elution

C. AGE

D. Annealing

Answer: B

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28. In majority of organisms genetic material is

A. DNA

B. RNA

C. m-RNA

D. Protein

Answer: A

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29. r- DNA is also called as

A. Chimeric DNA

B. Hybrid DNA-RNA

C. Recombinant of vector DNA and desired gene/s

D. Both (A) and (C)

Answer: B

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30. plasmids are

A. ss-DNA

B. ds-DNA(linear)

C. ds -DNA (circular)

D. denatured DNA

Answer: C

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31. PBR322 is most extensively studied in

A. Plasmid DNA of E.coli

B. Foreign gene

C. r-DNA

D. clone

Answer: A

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32. Restriction enzymes recognizes specific

A. Palindromic region

B. Exons

C. Introns

D. None of these

Answer: A

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33. Plasmids are

A. Extra nuclear genes of bacteria

B. Endosymbiont of bacterial cells

C. Best vectors DNA

D. All of these

Answer: D

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34. Tumour producing plasmid transforms

A. Animals

B. Plants

C. Bacteria

D. Fungi

Answer: B

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35. PCR is related to

A. DNA cloning

B. DNA amplification

C. DNA selective replication

D. All of these

Answer: B

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36. Molecular scissor is

A. Restriction endonuclease

B. Helicase

C. Urease

D. Peptidase

Answer: A

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37. Bacteria commonly used for transferring foreign DNA to crop plants ?

A. Penicillium expansum

B. Agrobacterium tumefaciens

C. Trichoderma harzianum

D. Meloidogyne incognita

Answer: B

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38. Ti plasmid is used in plant genetic engineering is a plasmid of

A. Azatobacter

B. Rhizobium

C. Agrobacterium

D. Saccharomyces

Answer: C

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39. Biotechnology helps in synthesizing

A. New generation antibiotics

B. New vaccines

C. GMO

D. All of these

Answer: D

View Text Solution

40. Which enzyme is used in PCR technology

A. DNA polymerase

B. Taq polymerase

C. Reverse transcriptase

D. Both (A) and (B)

Answer: D

View Text Solution

41. Heat shock treatment in bacterial transformation is to facilitate

A. Uptake of DNA through membrane transport proteins

B. Uptake of DNA through transient pores in bacterial cell wall.

C. Expression of antibiotic resistance gene

D. Binding of DNA to the cell wall.

Answer: B

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42. Who isolated the first restriction endonucleases ?

A. Temin and Baltimore

B. Sanger

C. Smith

D. Paul Berg

Answer: C

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43. Genetic engineering aims at

A. Destroying wild gene

B. Preserving defective gene

C. Curing human disease by introducing new gene

D. All the above

Answer: C

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44. Taq- polymerase used for amplification of DNA is related to

A. Hybridoma technique

B. PCR-technique

C. Gene cloning

D. r-DNA technology

Answer: B

View Text Solution

45. Agrobacterium tumifaciens used in Genetic engineering

A. DNA mapping

B. DNA-modification

C. Gene transfer

D. DNA Fingerprinting

Answer: C

View Text Solution

46. Which enzyme cuts DNA at specific positions

A. Restriction enzymes

B. Ligase

C. Exonuclease

D. Alkaline phosphate

Answer: A

View Text Solution

47. How many copies of DNA sample are produced in PCR technique after 6-cycle.

A. 4

B. 32

C. 64

D. 16

Answer: C

View Text Solution

48. Which of the following is the example of direct gene transfer ?

A. Micro injection

B. Electroporation

C. Particle gun

D. All of the above

Answer: D

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49. Thermal cycle takes place in which technique

A. Gel electrophoresis

B. PCR- technique

C. Centrifugation

D. Southern blotting

Answer: B

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50. Which of not correctly matched ?

A. Agrobacterium=Ti-plasmid

B. Cosmid=vectorDNA

C. Rhizobium=Asymbiotic-N_2-Fixer

D. Rhizobium=Asymbiotic-N_2-Fixer

Answer: C

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51. The function of polymerase chain reaction (PCR)

A. Translation

B. Transcription

C. DNA amplification

D. None of these

Answer: C

View Text Solution

52. Which of the following enzyme is used to join DNA fragments ?

A. Terminase

B. Endonuclease

C. Ligase

D. DNA polymerase

Answer: C

View Text Solution

53. What is true of plasmid ?

A. Found in viruses

B. Contains gene for vital activities

C. Part of nuclear chromosome

D. Widely used in gene transfer

Answer: D

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54. According to EFB, "The integration of natural science and organisms, cells, parts ther of and molecular analogues for products and services," is

A. Biochemistry

B. Bioinformatics

C. Biotechnology

D. Biology

Answer: C

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55. Which technique is used to check the progression of restriction enzyme digestion

A. PCR

B. Gel electrophoresis

C. Southern blotting

D. Staining

Answer: B

View Text Solution

56. Which one of the following represents a palindromic sequence in DNA ?

A.

$5' - CATTAG - 3'3' - GATAAC - 5'$

B.

$5' - GATACC - 3'3' - CCTAAG - 5'$

C. `5'-"GAATTC"-3' 3'-"CTTAAG"-5'

D.

$5' - CCAATG - 3'3' - GAATCC - 5'$

Answer: C

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57. The first clinical gene therapy was given for treating

A. rheumatoid arthritis

B. adenosine deaminase deficiency

C. diabetes mellitus

D. chicken pox

Answer: B

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58. Biolistics are suitable for

A. Constructing recombinant DNA by joining with vectors

B. DNA finger printing

C. Disarming pathogen vectors

D. Transformation of plant cells

Answer: D

View Text Solution

59. Which method of the following is not a direct method of gene transfer ?

A. Agrobacterium tumefaciens

B. Gene gun method

C. Biolistics

D. electroporation

Answer: A

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60. Special feature of Bt- cotton plant

A. The plant is completely resistant to insects

B. Requires lee fertilizers

C. It's leaf is resistant to pest but boll is destroyed by bollworms

D. This plant is resistant to certain insects

Answer: D

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61. Which one is not a restriction enzyme ?

A. EcoR1

B. Chitinase

C. BamH1

D. Hind-II

Answer: B

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62. Which one of the following enzyme is not involved in recombinant DNA technology ?

A. DNA Polymerase

B. Endonuclease

C. Ligase

D. Catalase

Answer: C

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63. Arrange the processes that occur in PCR in sequence

A. Annealing-denaturation-extension

B. Denaturation-annealing-extension

C. Extension-denaturation-annealing

D. Denaturation-extension-annealing

Answer: B

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64. Gene silencing using RNAI technique is applied to make

A. Nematode resistant plant

B. Edible vaccine

C. Iron fortified rice

D. Vitamin enriched cereals

Answer: A

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65. Genetic modification (GM) has been used to

A. Create tailor made plants

B. Supply alternative resources to industries

C. Enhanced nutritional value of food

D. All the above

Answer: D

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66. Which instrument is used for sepration of DNA fragments

A. PCR

B. Gel electrophoresis

C. Bioreactors

D. Restriction endonucleases

Answer: B

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67. Enzyme added to isolate DNA from fungi

A. Lysozyme

B. Cellulose

C. Invertase

D. Chitinase

Answer: D

View Text Solution

68. Which of the following feature is not necessary for cloning vector

A. Origin of replication

B. High copy number

C. Selectable marker

D. Cloning sites

Answer: B

View Text Solution

69. What is true for plasmid ?

A. Found in viruses

B. Contain genes for vital activities

C. Part of nuclear chromosome

D. Widely used in gene transfer

Answer: D

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70. More advancement in genetic engineering is due

A. Restriction endonucleases

B. Reverse transcriptase

C. Protease

D. Zymase

Answer: A

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

A. Nucleoid

B. Lomasomes

C. Mesosomes

D. Plasmids

Answer: D

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72. A mixture DNA fragments A, B, C and D with molecular weights of $A + B = C > B$ and $D > C$ was subjected to agarose gel electrophoresis. The position of these fragments from cathode to anode sides of the gel would be

A. B, A, C, D

B. A,B,C,D

C. C, A, B, D

D. B,A,D,C

Answer: A

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73. Plasmids are

A. CDNA

B. mitochondrial DNA

C. Circular extra chromosomal DNA in bacteria

D. Viral RNA

Answer: C

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74. Which conserved motifs are found In E. coli genes ?

A. TATA box

B. CAATbox

C. Pribnow box

D. All of these

Answer: C

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75. A technique which Involves deliberate manipula- tion of genes within or between species is called

A. Gene therapy

B. Hybridoma technology

C. Tissue culture

D. Genetic engineering

Answer: D

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76. One of the key factors, which makes the plasmid the vector in genetic engineering is that

A. It is resistant to antibiotics

B. It resistant to restriction enzymes

C. Its ability to carry a foreign gene

D. Its ability to cause infection in the host

Answer: C

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77. Which of the following is used as a best genetic vector in plants ?

A. Bacillus thuringiensis

B. Agrobacterium tumefaciens

C. Pseudomonas putida

D. All of these

Answer: B

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78. In plant biotechnology, root tumours are induced in plant using the bacterium

A. Agrobacterium rhizogenes

B. Agrobacterium basilis

C. Rhizobium

D. None of these

Answer: A

View Text Solution

79. The polymerase chain reaction is a technique that

A. Is used for in vivo replication of DNA

B. Is used for in vivo synthesis of mRNA

C. Is used for in vitro synthesis of mRNA.

D. Is used for in vitro replication of specific DNA sequence using thermostable DNA polymerase

Answer: D

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80. The construction of the first recombinant DNA was done by using the native plasmid of

A. E. coli

B. Salmonella typhimurium

C. Bacillus thuringiensis

D. Yeast

Answer: B

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81. Gel electrophoresis is used for

A. Construction of recombinant DNA by joining with cloning vectors

B. Isolation of DNA molecules

C. Cutting of DNA into fragments

D. Separation of DNA fragments according to their size

Answer: D

View Text Solution

82. Polyethylene glycol method is used for

A. Biodiesel production

B. Seedless fruit production

C. Energy production from sewage

D. Gene transfer without a vector

Answer: D

View Text Solution

83. Which one of the following is a case of wrong matching ?

A. Somatic hybridization - Fusion of two diverse cells

B. Vector DNA-Site fort-RNA synthesis

C. Micropropagation -In vitro production of plants in large numbers

D. Callus - Unorganised mass of cell produced in tissue culture

Answer: B

View Text Solution

84. A single strand of nucleic acid tagged with radioactive molecule is called :

A. Vector

B. Selectable marker

C. Plasmid

D. Probe

Answer: D

View Text Solution

85. There is a restriction endonuclease called EcoRI. What does 'co' part in it stand for ?

A. colon

B. coelom

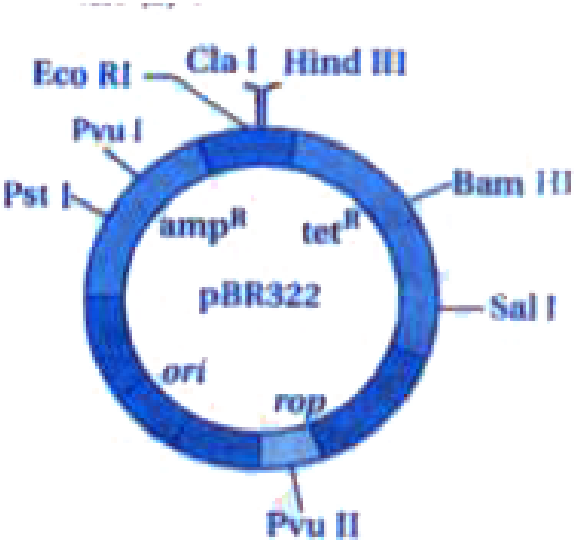
C. coenzyme

D. coli

Answer: D

View Text Solution

86. The figure below is the diagrammatic representation of the E.coli vector pBR 322. Which one of the given options correctly identifies its certain componant (s) ?



A. ori-restriction enzyme

B. rop-reduced osmotic pressure

C. Hind III, EcoR I-selectable markers

D. AmP^R, tet^R-antibiotic resistant gene

Answer: D

View Text Solution

87. In genetic engineering, the antibiotics are used

A. as selectable markers

B. to select healthy vectors

C. as sequences from where replication starts

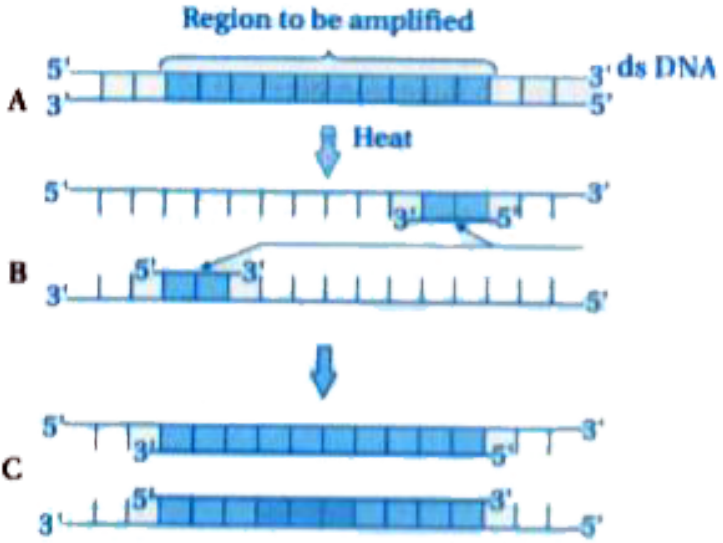
D. to keep the cultures free of infection.

Answer: A

View Text Solution

88. The figure below shows three steps (A, B, C) of Polymerase Chain Reaction (PCR). Select the option giving correct identification together

with what it represents ?



A. B- denaturation at a temperature of about $98^{\circ}C$ separating the two DNA strands

B. A- denaturation at a temperature of about $50^{\circ}C$

C. C- extension in the presence of heat stable DNA polymerase

D. A - annealing with two sets of primer

Answer: C

View Text Solution

89. Given below is a sample of a portion of DNA strand giving the base sequence on the opposite strands. What is so special shown in it ?

$5'$_____GAATTC_____$3'$

$3'$_____CTTAAG_____$5'$

A. Replication completed

B. Deletion mutation

C. Start codon at the 5' end

D. Palindromic sequence of base pairs

Answer: D

View Text Solution

90. Viral genome incorporated into host DNA is called :

A. Prophase

B. Prophage

C. Bacteriophage

D. None of the above

Answer: B

View Text Solution

91. DNA element with ability to change its position is called :

A. Cistron

B. Transposon

C. Intron

D. Recon

Answer: B

View Text Solution

92. Genetic material of virus is :

A. RNA only

B. DNA only

C. Both RNA and DNA

D. Either DNA or RNA

Answer: D

View Text Solution

93. Restriction endonucleases are most widely used in recombinant DNA technology. They are obtained from :

A. Plasmids

B. All prokaryotic cells

C. Bacteriophages

D. Bacterial cell

Answer: D

View Text Solution

94. Variable number of tandem repeats (VTNRS) in the DNA molecule are highly useful in :

A. Monoclonal antibody production

B. Stem cell culture

C. Recombinant DNA technology

D. DNA finger printing

Answer: D

View Text Solution

95. Monoclonal antibodies are produced from hybrid cells, called hybridomas. The cells employed to obtain these hybridcells are :

A. T-lymphocytes and myeloma cells

B. B-lymphocytes and carcinoma cells

C. B-lymphocytes and myeloma cell

D. Lymphoma cells and bone marrow cell

Answer: C

View Text Solution

96. Restriction endonucleases :

A. Are present in mammalian cells for degradation of DNA when the cell dies

B. Are used in genetic engineering for ligating two DNA molecules

C. A used in vitro DNA synthesis

D. Are synthesized by bacteria as part of their defence mechanism

Answer: D

View Text Solution

97. Protoplast isolation was first established by

A. Mendel

B. Bateson

C. Cocking

D. Skoog

Answer: C

View Text Solution

98. An institution where valuable plant material likely to become irretrievably lost in the wild or in cultivation is preserved a viable condition in known as

A. Genome

B. Gene library

C. Gene bank

D. Herbarium

Answer: C

View Text Solution

99. Plasmids are suitable vectors for gene cloning because :

A. These are small circular DNA molecules which can integrate with host chromosomal DNA

B. These are small circular DNA molecules with their own replication origin site

C. These can shuttle between prokaryotlc and eukaryotic cells

D. These often carry antibiotic resistance gene

Answer: C

View Text Solution

100. A plasmid :

A. Cannot replicate

B. Can replicale independently

C. Shows independent assortment

D. Lies together with chromosomes

Answer: B

View Text Solution

101. Gel electrophoresis is used for

A. Construction of recombinant DNA by joining with cloning vectors

B. Isolation of DNA molecules

C. Cutting of DNA into fragments

D. Separation of DNA fragments to their size

Answer: D

View Text Solution

102. Restriction endonucleases are so called because they :

A. Restriction nuclear activity

B. Cleave DNA molecules into smaller pieces at specific sites

C. Synthesize DNA

D. Breakdown DNA molecule at random

Answer: B

View Text Solution

103. Enzyme that cuts DNA is

A. DNA polymerase

B. DNA ligase

C. DNA lyase

D. Restriction endonuclease

Answer: D

View Text Solution

104. Restriction enzymes was discovered by

A. Alexender Fleming

B. Smith and Nathans

C. Berg

D. None of these

Answer: B

View Text Solution

105. Bacteria protect themselves from viruses by fragmentating viral DNA with

A. Endonuclease

B. Exonuclease

C. Gyrase

D. Ligase

Answer: B

View Text Solution

106. Complementary, synthetic and random DNAs are used as

A. Cluning vector

B. Passcnger DNA

C. Recombinant DNA

D. Transpoons

Answer: B

View Text Solution

107. Introduction of foreign gene for improving genotype is

A. Tissue culture

B. Vernilization

C. Biotechnology

D. Genetic engineering

Answer: D

View Text Solution

108. Cloning is means to

A. Replace original type

B. Preserve genotype

C. Production of HGH gene in Escherichia coli

D. None of these

Answer: B

View Text Solution

109. ELISA.....

A. Uses complement mediated cell lysis

B. Uses radiolabelled second antibody

C. Involves addition of substrate which is converted into coloured end product.

D. Requires RBCs

Answer: C

View Text Solution

110. The ends of DNA fragments are sticky due to

A. Unpaired bases

B. Calcium ions

C. Endonucleases

D. Free methylation

Answer: A

View Text Solution

111. In plant biotechnology, root tumors are induced by

A. Rhizobium

B. Agrobacterium tumifaciens

C. Agrobacterium rhizogenes

D. Agrobacterium basilis

Answer: C

View Text Solution

112. Introduction of transgenes will result in .....

A. Formation of new species

B. Formation of new protein

C. After a biosynthetic pathway

D. Both B and C

Answer: D

View Text Solution

113. Genetic engineering has being made possible due

A. Observation of DNA under electron microscope

B. We can break DNA at specific points by DNAase

C. Availability of restriction endonuclease in purified form

D. Knowledge of transduction

Answer: C

View Text Solution

114. Basic principle for developing transgenic plants and animals to introduce the gene of intertest into nucleus of

A. Body cells

B. Germ cells

C. Somatic cells

D. Vegetative cells

Answer: B

View Text Solution

115. SCID is caused by defective gene coding for enzyme

A. Adenosine deaminase

B. Guanosine deaminase

C. Guanosine transferase

D. Adenosine transaminase

Answer: A

View Text Solution

116. The bacterium Bacillus thuringiensis is widely used in contemporary biology as .....

A. Source of industrial enzyme

B. Insecticide

C. Indicator of water pollution

D. Agent for production of dairy products

Answer: B

View Text Solution

117. plasmids are used in genetics engineering because they are

A. Easily available

B. Able to replicate

C. Able to integrate with host chromosome

D. Inert

Answer: B

View Text Solution

118. Removal and insertion of gene is

A. Genetic engineering

B. Biotechnology

C. Gene therapy

D. Cytogenetics

Answer: A

View Text Solution

119. In gel electrophoresis, differential mobility of DNA depends upon

A. Helical nature of DNA

B. Charge and size of DNA

C. Hydrogen bonding between bases

D. Double stranded nature of DNA

Answer: B

View Text Solution

120. GM Bt brinjal has been developed in India for .....

A. Enhancing shelf life

B. Enhancing mineral content

C. Draught resistance

D. Insect resistance

Answer: D

View Text Solution

121. In transgenics, the expression of transgene in the A target tissue is known by.....

A. Reporter

B. Transgene

C. Enhancer

D. Promoter

Answer: A

View Text Solution

122. Which one of the following is used as vector for cloning into higher organisms

A. Salmonella typhimurium

B. Rhizopus nigricans

C. Retrovirus

D. baculovirus

Answer: C

View Text Solution

Section F Mcqs Asked In Competitive Exam

1. Chemical knife/molecular scissor of DNA is

A. Endonucleases

B. Polymerases

C. Ligases

D. Transcriptases

Answer: A

View Text Solution

2. Two bacteria most useful in genetic engineering are

A. Rhizobium and Azotobacter

B. Escherichia and Agrobacterium

C. Rhizobium and Diplococcus

D. Nitrosomonas and Klebsiella

Answer: B

View Text Solution

3. Giant Mouse has been produced through

A. Tissue culture

B. Gene differentiation

C. Gene manipulation

D. All the above

Answer: C

View Text Solution

4. What is true for plasmid ?

A. Found in viruses

B. Contains genes for vital activities

C. Part of nuclear chromosome

D. Widely used in gene transfer

Answer: D

View Text Solution

5. Introduction of genetically modified food is not desirable because

A. It will affect economy of developing countries

B. The products are less tasty

C. They are costly

D. There is danger of entry of toxins and virus in food

Answer: D

View Text Solution

6. Ti-plasmid is used for making transgenic plants. It is obtained from.

A. Azotobacter

B. Agrobacterium

C. Rhizobium in leguminous root

D. Yeast

Answer: B

View Text Solution

7. In transgenics, the expression of transgene in the target tissue is known by

A. Transgene

B. Enhancer

C. Promoter

D. Reporter

Answer: D

View Text Solution

8. Production of human protein in bacterial genetic engineering is possible because

A. Human chromosome replicates bacterial cell

B. Mechanism of gene regulation is identical in humans and bacteria

C. Bacterial cell can undertake RNA splicing

D. Genetic code is universal

Answer: D

View Text Solution

9. Golden Rice will help in

A. Producing petrol-like fuel

B. Pest resistance

C. Herbicide tolerance

D. Alleviation of Vitamin-A deficiency

Answer: D

View Text Solution

10. Genetically engineered microorganism used successfully in bioremediation of oils spills is

A. Trichoderma

B. Xanthomonas

C. Bacillus

D. Pseudomonas putida

Answer: D

View Text Solution

11. The linking of antibiotic resistance gene with the plasmid vector became possible due to

A. DNA polymerase

B. Exonucleases

C. DNA ligase

D. Endonucleases

Answer: C

View Text Solution

12. Human insulin is being commercially produced from transgenic species of

A. Rhizobium

B. Saccharomyces

C. Mycobacterium

D. Escherichia

Answer: D

View Text Solution

13. Cry I endotoxins obtained from Bacillus thuringiensis are effective against.

A. Nematodes

B. Mosquitoes

C. Bollworms

D. Flies

Answer: C

View Text Solution

14. A transgenic food crop which may help in solving the problem of night blindness in developing countries is

A. Bt Soyabean

B. Golden Rice

C. FlavrSavr Tomatoes

D. Starlink Maize

Answer: B

View Text Solution

15. Main objective of production use of herbicide resistant GM crops is to

A. Encourage eco-friendly herbicides

B. Reduce herbicide accumulation articles for health safety

C. Eliminate weeds from the fields without the in food use of manual labour

D. Eliminate weeds from the fields without the use of herbicides

Answer: C

View Text Solution

16. What is true about Bt toxin

A. The concerned Bacillus has antitoxins.

B. The inactive protoxin gets converted into active form in the insect gut

C. Bt protein exists as active toxin in the Bacillus

D. The activated toxin enters the ovaries of the pest to sterilise it and thus prevent its multiplication

Answer: B

View Text Solution

17. Transgenics plants are the ones

A. Grown in artificial medium after hybridization in the field

B. Produced by a somatic embryo in artificial medium

C. Generated by introducing foreign DNA in to a cell and generating a plant from that cell

D. Produced after protoplast fusion in artificial medium

Answer: C

View Text Solution

18. Which one of the following is commonly used in transfer of foreign DNA into crop plants ?

A. Penicillium expansum

B. Trichoderma polysporum

C. Meloidogyne incognita

D. Agrobacterium tumefaciens

Answer: D

View Text Solution

19. The genetically-modified (GM) brinjal in india has been developed for

A. Enhancing shelf life

B. Enhancing mineral content

C. Drought-resistance

D. Insect-resistance

Answer: D

View Text Solution

20. Some of the characteristics of Bt cotton are

A. Medium yield, long fibre and resistance to beetle pests

B. High yield and production of toxic protein crystals which kill dipteran pests

C. High yield and resistance to bollworms

D. Long fibre and resistance to aphids

Answer: C

View Text Solution

21. An improved variety of transgenic basmati rice

A. Gives high yield and is rich in vitamin A

B. Is completely resistant to all insect pests and diseases of paddy

C. Gives high yield but has no characteristic aroma

D. Does not require chemical fertilizers and growth hormones

Answer: A

View Text Solution

22. Restriction endonucleases are enzymes which

A. recognize a specific nucleotide sequence for binding of DNA ligase

B. restrict the action of the enzyme DNA polymerase

C. remove nucleotides from the ends of the DNA molecule

D. Make cuts at specific positions within the DNA molecule

Answer: D

View Text Solution

23. Genetic engineering has been successfully used for producing

A. Transgenic models for studying new treatments for certain cardiac diseases

B. Transgenic Cow-Rosie which produces high fat milk for making ghee

C. Animals like bulls for farm work as they have super power

D. Transgenic mice for testing safety of polio vaccine before use in humans

Answer: D

View Text Solution

24. Maximum number of existing transgenic animals

A. Fish

B. Mice

C. Cow

D. Pig

Answer: B

View Text Solution

25. Agarose extracted from sea weeds finds use in

A. Spectrophotometry

B. Tissue Culture

C. PCR

D. Gel electrophoresis

Answer: D

View Text Solution

26. The process of RNA interference has been used in the development of plants resistant to

A. Nematodes

B. Fungi

C. Viruses

D. Insects

Answer: A

View Text Solution

27. Silencing of mRNA has been used in producing F transgenic plants resistant to :

A. Bollworms

B. Nematodes

C. White rusts

D. Bacterial blights

Answer: B

View Text Solution

28. Which one of the following techniques made it possible to genetically engineer living organism ?

A. Recombinant DNA techniques

B. X-ray diffraction

C. Heavier isotope labelling

D. Hybridization

Answer: A

View Text Solution

29. Read the following four statements (a - d) about certain mistakes in two of them

(a) The first transgenic buffalo, Rosie, produced milk which was human alpha-lactalbumin enriched.

(b) Restriction enzymes are used in isolation of DNA from other macro-molecules.

(c) Downstream processing is one of the steps of R-DNA technology.

(d) Disarmed pathogen vectors are also used in transfer of R-DNA into the host.

Which are the two statements having mistakes

?

A. Statement (b) and (c)

B. Statement (c) and (d)

C. Statement (a) and (c)

D. Statement (a) and (b)

Answer: D

View Text Solution

30. For transformation, micro-particles coated with DNA to be bombarded with gene gun are made up of :

A. Silver or Platinum

B. Platinum or Zinc

C. Silicon or Platinum

D. Gold or Tungsten

Answer: D

View Text Solution

31. Yeast is used in the production of

A. Citric acid and lactic acid

B. Lipase and pecitnase

C. Bread and beer

D. Cheese and butter

Answer: C

View Text Solution

32. Which one is a true statement regarding DNA polymerase used in PCR

A. It is used to ligate introduced DNA in recipient cell

B. It serves as a selectable marker

C. It is isolated from a virus

D. It remains active at high temperature

Answer: D

View Text Solution

33. Consumption of which one of the following foods can prevent the blindness associated with Vitamin-A deficiency ?

A. FlavrSavr tomato

B. Canolla

C. Golden rice

D. Bt brinjal

Answer: C

View Text Solution

34. PCR and Restriction Fragment Length Polymorphism are the methods for

A. Study of enzymes

B. Genetic transformation

C. DNA sequencing

D. Genetic Fingerprinting

Answer: D

View Text Solution

35. The first clinical gene therapy was given for treating

A. Diabetes mellitus

B. Chicken pox

C. Rheumatoid arthritis

D. Adenosine deaminase deficiency

Answer: D

View Text Solution

36. Tobacco plants resistant to a nematode have been developed by the introduction of DNA that produce the host cells

A. both sense and anti-sense RNA

B. a particular hormone

C. an antifeedant

D. a toxic protein

Answer: A

View Text Solution

37. Biolistics (gene-gun) is suitable for

A. Disarming pathogen vectors

B. Transformation of plant cells

C. Constructing recombinant DNA by joining with vectors

D. DNA finger printing

Answer: C

View Text Solution

38. In genetic engineering, the antibiotics are used

A. as selectable markers

B. to select healthy vectors

C. as sequences from where replication starts

D. to keep the cultures free of infection

Answer: A

View Text Solution

39. Thermal cycle is used in

A. Radioactivation

B. Chemical reaction

C. Polymerase chain reaction

D. Enzyme catalysed reactions

Answer: C

View Text Solution

40. Advancement in genetic engineering has been possible due to discovery of

A. Transposons

B. Endonucleases

C. Exonucleases

D. Oncogenes

Answer: B

View Text Solution

41. With the help of DNA ligase donor DNA fragment is joined. It is called

A. Molecular cloning

B. Tissue culture

C. Protoplasmic fusion

D. Annealing or Ligation

Answer: D

View Text Solution

42. An abnormal gene is replaced by normal gene. It is called

A. Gene therapy

B. Cloning

C. Mutation

D. None of the above

Answer: A

View Text Solution

43. Bt cotton has been produced by

A. In situ hybridisation of Bt gene

B. Northern blotting of Bt gene

C. Cloning of Bt gene

D. Southern blotting of Bt gene

Answer: C

View Text Solution

44. In genetic engineering which is used to transfer of genes from one cell to another

A. Vector

B. Probe

C. Plasmid

D. Virus

Answer: A

View Text Solution

45. cDNA is

A. Circular DNA

B. Coiled DNA

C. Cytoplasmic DNA

D. Complementary DNA

Answer: D

View Text Solution

46. DNA segment cleaved by EcoRI is

A. ATICGA, TAAGCT

B. GAATIC, CTIAAG

C. GCTIAA, CGAATI

D. GTICAA,CAAGTI

Answer: B

View Text Solution

47. Extra chromosomal DNA used as vector in gene cloning is

A. Transposon

B. Intron

C. Exon

D. Plasmid

Answer: D

View Text Solution

48. Natural genetic engineer is

A. Pseudomonas putida

B. Agrobacterium tumefaciens

C. Escherichia coli

D. Bacillus subtilis

Answer: B

View Text Solution

49. Golden rice was created by transforming rice with two beta-carotene biosynthesis genes, namely

A. Psy and Crtl genes

B. LCY-e

C. CHY -1

D. CHY -2

Answer: A

View Text Solution

50. Restriction endonucleases are used as

A. molecular build up at nucleotides

B. molecular degradating to DNA breakup

C. molecular knives for cutting DNA at specific sites

D. molecular cement to combine DNA sites

Answer: C

View Text Solution

51. A kind of Biotechnology involving manipulation of DNA is

A. DNA replication

B. Genetic engineering

C. Denaturation

D. Renaturation

Answer: B

View Text Solution

52. What is true of plasmid ?

A. Found in viruses

B. Contains genes for vital activities

C. Part of nuclear chromosome

D. Widely used in gene transfer

Answer: D

View Text Solution

53. Nucleic acid segment tagged with a radioactive molecule is called

A. Clone

B. Probe

C. Plasmid

D. Vector

Answer: B

View Text Solution

54. GM brinjal in India has been developed for resistance against

A. Virus

B. Bacteria

C. Fungi

D. Insects

Answer: D

View Text Solution

55. Restriction enzymes are used in genetic engineering and

A. cut DNA base pairs at specific sites

B. cut DNA base pairs at variable sites

C. join two DNA segments

D. cut RNA base pairs at specific sites

Answer: A

View Text Solution

56. The colonies of recombinant bacteria appear white in contrast to blue colonies of non- recombinant bacteria because of

A. Non-recombinant bacteria containing β-galactosidase

B. Insertional inactivation of α-galactosidase in non-recombinant bacteria

C. Insertional inactivation of α-galactosldase in recombinant bacteria

D. Inactivation of glycosidase enzyme in recombinant bacteria

Answer: C

View Text Solution

57. DNA fragments generated by the restriction endonucleases in a chemical reaction can be separated by

A. centrifugation

B. polymerase chain reaction

C. electrophoresis

D. restriction mapping

Answer: C

View Text Solution

58. Which vector can fragment of DNA ?

A. Bacterial artificial chromosome

B. Yeast artificial chromosome

C. Plasmid

D. Cosmid

Answer: C

View Text Solution

59. In vitro clonal propagation in plants is characterised by

A. PCR and RAPD

B. Northern blotting

C. electrophoresis and HPLC

D. microscopy

Answer: A

View Text Solution

60. An analysis of chromosomal DNA using the Southern hybridisation technique does not use

A. electrophoresis

B. blotting

C. autoradiography

D. PCR

Answer: D

View Text Solution

61. The DNA molecule to which the gene of interest is integrated for cloning is called

A. transformer

B. vector

C. template

D. carrier

Answer: B

View Text Solution

62. The cutting of DNA at specific locations became possible with the discovery of

A. restriction enzymes

B. probes

C. selectable markers

D. ligases

Answer: A

View Text Solution

63. Stirred-tank bioreactors have been designed for

A. purification of product

B. addition of preservatives to the product

C. availability of oxygen throughout the process

D. ensuring anaerobic conditions in the culture

Answer: C

View Text Solution

64. A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using

A. Eco RI

B. Taq polymerase

C. polymerase-III

D. ligase

Answer: D

View Text Solution

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

A. Separation

B. Purification

C. Preservation

D. Expression

Answer: D

View Text Solution

66. Which of the following restriction enzymes produces blunt ends ?

A. Sal I

B. Eco RV

C. Xho

D. Hind III

Answer: B

View Text Solution

67. Which of the following is a restriction endonuclease ?

A. Protease

B. DNase I

C. RNase

D. Hind II

Answer: D

View Text Solution

68. Which of the following is not a feature of the plasmids ?

A. Circular structure

B. Transferable

C. Single-stranded

D. Independent replication

Answer: C

View Text Solution

69. The Taq polymerase enzyme, is obtained from

A. Thiobacillus ferroxidans

B. Bacillus subtilis

C. Pseudomonas subtilis

D. Thermus aquaticus

Answer: D

View Text Solution

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

A. bromophenol blue

B. acetocarmine

C. aniline blue

D. ethidium bromide

Answer: D

View Text Solution

71. A gene, whose expression helps to identify transformed cells is known as

A. selectable marker

B. vector

C. plasmid

D. structural gene

Answer: A

View Text Solution

72. What is the criterion for DNA fragments on agarose gel during gel movement electrophoresis ?

A. The larger the fragment size, the farther it moves

B. The smaller the fragment size, the farther it moves

C. Positively charged fragments move to farther end

D. Negatively charged fragments do not move

Answer: B

View Text Solution

73. The process of separation and purification of expressed protein before marketing is called

A. upstream processing

B. downstream processing

C. bioprocessing

D. postproduction processing

Answer: B

View Text Solution

74. Which of the following is commonly used as a vector for introducing a DNA fragment in human lymphocytes ?

A. pBR 322

B. Retrovirus

C. λ phage

D. Ti plasmid

Answer: D

View Text Solution

75. The correct order of steps in Polymerase Chain Reaction (PCR) is

A. Denaturation, Annealing, Extension

B. Extension, Denaturation, Annealing

C. Denaturation, Extension, Annealing

D. Annealing, Extension, Denaturation

Answer: A

View Text Solution

76. Which one of the following equipments is essentially required for growing microbes on a

large scale, for industrial production of enzymes ?

A. BOD incubator

B. Sludge digester

C. Industrial oven

D. Bioreactor

Answer: D

View Text Solution

77. Following statements describe the characteristics of the enzyme Restriction endonuclease. Identify the incorrect statement.

A. The enzyme cuts DNA molecule at identified position within the DNA

B. The enzyme binds DNA at specific sites and cuts only one of the two strands.

C. The enzyme cuts the sugar-phosphate backbone at specific sites on each

strand.

D. The palindromic nucleotide sequence in the DNA enzyme recognizes a specific

Answer: B

View Text Solution

78. DNA precipitation out of a mixture of biomolecules can be achieved by treatment with

A. Isopropanol

B. Chilled ethanol

C. Methanol at room temperature

D. Chilled chloroform

Answer: B

View Text Solution