BIOLOGY

BOOKS - SANTRA BIOLOGY (BENGALI ENGLISH)

BIOTECHNOLOGY AND ITS APPLICATION

Multiple Choice Questions

1. Genetic engineering was developed during

A. 2000

B. 1980

C. 1990

D. 1970

Answer: D

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2. Biotechnology produced new organisms utilizing

A. Recombinant DNA technology

B. Mutations

C. Both (a) and (b)

D. None of these

Answer: C

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3. PCR stands for

A. Polyethyl Cytosine Reaction

B. Polymerization chian raeaction

C. Polymersase Chain reaction

D. Polymerase Cyclic Reaction

Answer: C

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4. Genetic engineering would not have been possible if one of these were absent

A. DNA ligase

B. RNA synthetase

C. DNA polymerase

D. Reverse transcriptase

Answer: A

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5. In the process of recombinant DNA technology, the isolated foreign DNA is inserted into another DNA molecule known as

A. DNA vector

B. Cloning vector

C. RNA vector

D. Protein vector

Answer: B

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6. Which of the following organelles is -related to genetic engineering?

A. Plasmids

B. Mutation

C. Plastids

D. Hybrid vigour

Answer: A

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7. Which of the following is not concerned with biotechnology?

A. Sewage treatment

B. Biofertilizer

C. Wood seasoning

D. biogas production

Answer: C

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8. Artificial synthesis of DNA done by

A. Watson and Crick

B. Kornberg

C. frankilin

D. wilkinson

Answer: B

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9. The technique for breakage of DNA fragments and inserting in not another DNA molecule, is related to

A. Gene cloning

B. Gene typing

C. Gene splicing

D. DNA fingerprinting

Answer: A

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10. Extrachromosomal self replication double stranded circular DNA in bacterial cell is called

A. Cosmid

B. Fosmid

C. Plasmid

D. All of these

Answer: D

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11. Clones are stored in

A. Book shelves

B. Gene bank

C. Biological reserves

D. All of these

Answer: B

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12. Ligase helps in

A. Translation

B. inserting few genes in DNA

C. Removal of few genes

D. Bringing transversion in chromosome

Answer: B

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13. Which of the following is not a genetic vector?

A. Phage

B. Cosmid

C. Plasmid

D. Virusoid

Answer: D

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14. The term biotechnology was given in 1917 by

A. Nathans

B. karl Ereky

C. kornberg

D. Arber

Answer: B

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15. The linking if antibiotic resistance genes with the plasmid vector is in the presence of the enzyme

A. DNA polymerase

B. DNA ligase

C. Endonuclease

D. alkaline phosphate

Answer: B

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16. Which of the following cell is totipotent

A. sieve tube

B. Xylem vessels

C. cork

D. meristem

Answer: D

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17. There is a specific DNA sequence in the chromosome that is responsible of initiating

A. Replication

B. Transcription

C. Traslation

D. Recombination

Answer: A

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18. The first restriction endonuclease was

A. HindII

B. Hindi III

C. Ava I

D. EcorII

Answer: A

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19. which type of restriction enzymes are used in recombinant DNA technology?

A. Type-III

B. Type -II

C. Type -I

D. All of these

Answer: B

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20. Taq polymerase enzyme is used in

A. gene cloning

B. Restriction mapping

C. PCR

D. All of these

Answer: C

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21. How many types of restriction endonuclesses are present ?

A. Five types

B. Three types

C. Four types

D. Two types

Answer: B

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22. Which of the following is a method of gene transfer ?

A. Particle gene

B. Electroporation

C. Microinjection

D. All of these

Answer: D

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23. which of the following are molecular markers?

A. RELPs

B. RAPDs

C. SSR

D. All of these

Answer: D

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24. A gene carried by recombinant DNA is cloned when

A. It is transcribed

B. It is hybridized

C. Its host becaterium devides binary fission

D. It is fragmented by restriction enzymes

Answer: C

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25. Cloning is a means to

A. Production of high degree is eescherichia coli

B. Preserve genotype

C. Replace orginal genotype

D. None of the above

Answer: B

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26. Plasmids are used in genetic engineering because they are

A. able to replicate

B. able to integrate

C. Easily available

D. Inert

Answer: A

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27. In recombinant DNA technology, a plasmid vector must be cleaved by

A. Modified DNA ligase

B. Four separate enzymes

C. A heated alkaline solution

D. The same enzyme that cleaves the donor genes

Answer: D

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28. The DNA polymerase was investigated by

A. Kornberg

B. Boliver and Rodriguez

C. Bert

D. Stanley cohen and herbert Boyer

Answer: A

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29. The first artificial cloning vector was

A. pBR322

B. cosmid vectors

C. Plasmid vectors

D. M13

Answer: A

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30. Ligase catalyze the formation of bonds between

A. C=C

B. C-H

C. C=O

D. H-H

Answer: C

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31. Giant mouse has been produced through

A. Gene differentiation

B. Gene manipulation

C. Tissue culture

D. All of these

Answer: B

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32. The enzyme TPA or tissue plasminogen activator is used for

A. Clearing turbidity of juices

B. Stimulating thromoboplastin production

C. Maintaining plasma content

D. Dissolving blood clots

Answer: D

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33. Alkaline phosphatase can be isolated from

A. Calf intestine

B. cat intestine

C. bacteria

D. Both a and c

Answer: D

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34. which of the following is restriction endonuclease?

A. Amylase

B. alu I

C. Lipase

D. Anhydrase

Answer: B

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35. VNTRs are

A. Very narrow tandem repeats

B. Variable number of tandem repeats

C. Valuable non +cistronic transposonic regions

D. Variable non- cistronic transposon repeats

Answer: B

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36. Viral genome incorporated into host DNA is called

A. prophase

B. Bacteriophage

C. Prophage

D. Noen

Answer: C

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37. Crown gall disease in plants is caused by

A. bacteria

B. virus

C. Pi plasmid

D. Ti plasmid

Answer: D

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38. Restriction endonucleases used in RDT are obtained from

A. All prokaryotes

B. bacteriophages

C. Bacterial cell

D. Plasmids

Answer: C

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39. The tumor inducing capacity of Agrobacterium tumfaciens is located in large extra-chromosomal plasmids called

A. Ti plasmid

B. p BR322

C. Lambda phage

D. Ri plasmid

Answer: A

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40. Large scale production of biotechnological products involves use of

A. RELP

B. PCR

C. Electrophoresis

D. Bioreactor

Answer: D

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41. At which stage of meiosis, recombinant DNA is made?

A. Diplotene

B. Pachytene

C. MetaphaseI

D. Zygote

Answer: B

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42. which of the following bacteria has found extensive use in genetic engineering work in plants Best genetic vector used in plants

A. xanthomonas citri

B. bacillus thurinigiensis

C. Agrobacterium tumfaciens

D. E. coli

Answer: C

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43. Bt is resistant to

A. Boll worm

B. herbicide

C. Virus

D. Adverse environment conditions

Answer: A

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44. The organism that carry foreign genes combination of genetic material obtained through the use of modern biotechnology are called

A. Recombinant

B. Transgenic

C. Genotype

D. Mutant

Answer: B

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45. Transgenic crops developed to tolerate herbicides are

A. Maize and sugarcane

B. Tomato and tobacoo

C. tomato and rice

D. Rice and wheat

Answer: B

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46. Humulin (human insulin) is

A. A vaccine

B. A carbohydrate

C. A protein

D. An antibody

Answer: C

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47. The first genetically engineered human insulin (Humulin) was launched on 5th July 1983 by an American company named

A. Hoechst

B. Biotech

C. Eli Lilly

D. Columbus

Answer: C

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48. It is beneficial to have insulin by biotechnology, because

A. It can be produced in mass

B. It is non allergic

C. It is less expensive

D. All of above

Answer: D

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49. Escherichia coli is used in biological researches because

A. In can easily multiply in the host

B. It is easy to handle

C. It can be easily cultured

D. It is easily available

Answer: C

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50. Bacillus thuringiensis (Bt) is a bacterium of

A. Dirty water

B. skin of dog

C. small intestine

D. soil

Answer: D

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51. The first transgenic crop was

A. Flax

B. Pea

C. tobacco

D. cotton

Answer: C

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52. Single cell protein (SCP) is obtained from

A. Multicellular microorganisms

B. Unicellular microorganisms

C. Bacteria only

D. Both a and b

Answer: D

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53. Discussions on possible hazard caused by cloning recombinant DNA molecules began in the early

A. 1982

B. 1975

C. 1974

D. 1970

Answer: D

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54. The transgenic food may cause

A. syphilis

B. Allergies

C. Benign tumour

D. None of these

Answer: B

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55. Which is not transgenic plant

A. Maize

B. Cucumber

C. soyabean

D. Golden rice

Answer: B

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56. Which have been prepared commercially through mutations to provide higher yield?

A. Vineger and lactic acid

B. Alcoholic drinks

C. Yoghurt and cheese

D. All

Answer: D

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57. Example/Examples of transgenic animals is/are

A. Mosuse

B. Pig

C. Cow

D. all

Answer: D

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58. The first transgenic commercial crop an insect resistant cotton variety (Bt cotton), in India was grown in

A. 2001

B. 2002

C. 2004

D. 1990

Answer: B

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59. The most likely reason for the development of resistance against pesticides in insects damaging a crop is

A. Genetic recombination

B. Directed mutations

C. Random mutations

D. Acquired heritable cahnes

Answer: C

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60. Which transgenic variety had to be withdrawn due to severe allergic reactions in some people in Mexico?

A. Potato

B. Pea

C. soyabean

D. Wheat

Answer: C

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61. Insulin was named by

A. Sanger

B. Thompson

C. Sharpey-schafer

D. Abel

Answer: C

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62. Blindness is prevented by use of which crop in poor countries ?

A. Pea

B. Golden rice

C. Flavr savr

D. Wheat

Answer: B

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63. Department of Biotechnology (DBT) new Delhi began field trials using transgenic plant in

A. 1996

B. 1994

C. 1995

D. 1991

Answer: C

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64. The best method to protect genetic resources is

A. Cloning of plant

B. Multiplication

C. Gene library

D. Cryopreservation

Answer: D

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65. The statement true for viruses is

A. They are living organisms

B. They have DNA or RNA

C. They replicate in animal cells only

D. They are later than bacteria

Answer: B

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66. Addition of phage's DNA into genetic material of host in called

A. Lysis

B. Prophage

C. Lysogeny

D. None of these

Answer: C

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67. Genetic engineering is possible because

A. Restriction endonucleases purified from bacteria can be used in vitro

B. We can cut DNA at specific sites by endonuclease like DNA are

C. We can see DNA by electron microscope

D. Phenomenon of transduction is bacteria is well understood

Answer: A


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68. The transgenic animals are those which have

A. Foreign RNA in all of their cells

B. Foreign DNA in all of their cells

C. Foreign DNA some of their cells

D. Both (a) and (c)

Answer: B

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69. Tsan synthesized

A. sheep insulin

B. Human insulin

C. Cow insulin

D. Insulin of dog

Answer: B

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70. The molecular structure of insulin was described by

A. Sanger

B. Richardson

C. Swaminathan

D. Kornberg

Answer: A

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71. which vitamin was first to be produced by using biotechnology

A. Vitamin B1

B. Vitamin C

C. Vitamin A

D. Vitamin B2

Answer: B

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72. Term antibiotic was introduced by S.A Waksman. Which species produce more than 60 antibiotics

A. Pseudomonas

B. Penicillium notatum

C. Bacillus subtilis

D. Streptomyces griseus

Answer: C

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73. which organic acid was first produced from microbial fermentation ?

A. Citric acid

B. lactic acid

C. Gluconic acid

D. Acetic acid

Answer: B

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74. Vitamin B2 (riboflavin) is obtained from

A. Acetobacter aceti

B. Ashbya gossypii

C. Aspergillus niger

D. Penicillium notatum

Answer: B

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75. Which of the antibiotics is fungal in origin ?

A. Griseofulvin

B. Cephalosporin

C. penicillin

D. All of these

Answer: D

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76. Waksman was a well known

A. Bryologist

B. Psycohlogist

C. Pteridologist

D. soil microbiologist

Answer: D

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77. Antibiotics are

A. Plants

B. drugs

C. Syrups

D. Toxins

Answer: B

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78. First antibiotic isolated was

A. Streptomycin

B. Neomycin

C. Penicillin

D. Erythromycin

Answer: C

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79. Enzyme tissue plasminogen activator (tPA) is effective in

A. Clearing turbidity of juices

B. Stimulating thromboplastin production

C. Breakdown blood clots

D. Manintaining turgor pressure

Answer: C

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80. Sour taste of vinegar is due to

A. Acetic acid

B. Fumeric acid

C. Butyric acid

D. Lactic acid

Answer: A

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81. The genome map was produced under human genome project in

A. 2000

B. 1996

C. 1994

D. 1992

Answer: C

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82. An important objective of biotechnology in agriculture section is to

A. Increase nitrogen content

B. Decrease seed number

C. Produce pest resistant varieties of plant

D. Increase plant weight

Answer: C

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83. For DNA fingerprinting DNA is obtained from

A. Hair root cell

B. white blood corpuscles

C. Body secretion

D. all of these

Answer: D

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84. A protein supplement is

A. Spirulina

B. chlorella

C. Gracilaria

D. All of these

Answer: A

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85. Fingerprinting was first used in

A. India

B. U.K

C. U.S.A

D. England

Answer: B

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86. Most of antibodies are obtained from

A. fungi

B. virus

C. Alage

D. Actinomycetes

Answer: D

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87. Which of the following is effective against virus?

A. interferon

B. Teracyclin

C. penicilin

D. All of these

Answer: A

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88. Term antibody was defined by

A. L.pasteur

B. S. wakesman

C. Vuillemin

D. A. Fleming

Answer: C

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89. The slow ripening transgenic tomato was developed in USA by using

A. Transgene selecting approach

B. Ribozyme technology

C. Antisense RNA technology

D. Co-suppression silencing approach

Answer: C

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90. Which Bt crop is recently recommended for cultivation in India?

A. Rice

B. Wheat

C. Soyabean

D. Cotton

Answer: D

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91. Hybridoma technology has been successfully used in

A. Production of alcohol in bulk

B. synthesis of haemoglobin

C. synthesis of monoclona antibodies

D. production of somatic hybrid

Answer: C

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92. Interferons are

A. Lipids

B. Proteins

C. Glycoproteins

D. Carbohydrates

Answer: C

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93. Tissue plasminogen activator (tPA) is

A. A vitamin

B. An enzyme

C. An electric device

D. A chemical stimulating tissue differentiation

Answer: B

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94. A bioreactor is

A. Hybridoma

B. Culture of bacteria

C. Fermentation tank

D. Culture for sysnthesis of new chemicals

Answer: C

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95. Bt toxin is

A. Intracellular crystalline protein

B. Extracellular crystalline protein

C. Lipid

D. Intracellular lipids

Answer: A

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96. Vitamin B12 is produced directly during course of fermentation by

A. Rhizopus

B. Saccharomyces

C. Propionibacterium

D. Ashbya gossypii

Answer: C

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97. TPA is used in

A. Backing and brewing

B. Cheese manufacture

C. hydrolysis of lactose in milk and whey

D. Breakdown of blood clot in heart attack

Answer: D

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98. The technique of DNA fingerprinting was pioneered and perfected by

A. Francois jacob

B. Beadle and Tatum

C. jacques Monad

D. Alec Jeffreys

Answer: D

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99. A fusion product arising out of a fusion between a protoplast containing nucleus and a protoplasts without nucleus, is known as

A. Cybrid

B. hybrid

C. Nucleoid

D. monohybrid

Answer: A

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100. The new strain of bacteria produced by biotechnology in alcohol industry is

A. Saccaromyces cerevisiae

B. Bacillus subtilis

C. Escherichia

D. Pseudomnas putida

Answer: D

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101. Restriction endonuclease is employed for cutting

A. A single stranded DNA

B. Double stranded DNA

C. RNA fragment

D. mRNA

Answer: B

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102. Which enzyme is useful in genetic engineering?

A. DNAse

B. Amylase

C. Lipase

D. Restriction endonuclease

Answer: D

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103. Restriction enzymes are used in genetic engineering because

A. Can join DNA frgments

B. Cut DNA at specific base sequence

C. Cut DNA at variable sites

D. Are proteolytic enzymes which degrade harmful proteins

Answer: B

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104. It is now possible to breed plants and animals of desired characters through

A. Tissue culture

B. Genetic engineering

C. Ikebana technique

D. Chromosome engineering

Answer: B

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105. Genetic engineering is

A. Plastic surgery

B. addition or removal of genes

C. Study of extra nuclear genes

D. All the above

Answer: B

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

A. Oncogene

B. Transposons

C. Restriction endonuclease

D. Exonucleases

Answer: C

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107. Genetically engineered bacteria are being used in commercial production of

A. Melatonin

B. Testosterone

C. Human insulin

D. Thyroxine

Answer: C

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108. Bacterial plasmid contains

A. RNA

B. RNA+ protein

C. DNA

D. photosynthetic structure

Answer: C

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109. Structure involved in genetic engineering is

A. Plastid

B. Restriction endonuclease

C. DNA polymersase

D. Prochromosome

Answer: B

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110. Plasmid are vectors for gene cloning because they

A. Self replicate in bacterial cell

B. Replicate freely outside of bacterial cells

C. Can be multiplied in culture

D. can be multiplied in laboratories using enzyme

Answer: A

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111. Chemical knives /molecular scissor s of DNA are

A. Restriction endonucleases

B. Polymerases

C. Ligases

D. Transcriptase

Answer: A

112. Two bacteria most useful in genetic engineering are

A. Rhizobium and Azotobacter

B. Escherichia and Agrobacterium

C. Nitrosomonas and klebsiella

D. Clone

Answer: B

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113. Cloning is means to

A. Replace original genotype

B. Preserve genotype

C. Production of HGH gene in Escherichia coli

D. None of the above

Answer: B

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114. The technique of insertion of a desired gene into DNA of plasmid vector

A. Dressing

B. Splicing

C. Cloning

D. Drafting

Answer: A

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115. Plasmid are used in genetic engineering because they are

A. Easily available

B. Able to replicate

C. Able to integrate with host chromosome

D. Inert

Answer: B

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116. Bacterium commonly used in plant genetic engineering is

A. Agrobacterium

B. Corynebacterium

C. Bacillus subtilis

D. Salmonella typhii

Answer: A

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117. Giant mouse has been produced throgh

A. Tissue culture

B. Gene differentiation

C. gene manipulation

D. All the above

Answer: C

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118. which is related to genetic engineering

A. Plastid

B. Plasmid

C. Heterosis

D. Mutation

Answer: B

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119. A plasmid

A. Lives together with chromosome

B. shows dependent assortment

C. Can replicate independently

D. cannot replicate

Answer: C

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120. Restriction endonuclease is used in

A. Tissue culture

B. Genetic engineering

C. Cell fractionaltion

D. regeneraton of tissue

Answer: B

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121. Enzyme required for polymerase chain reaction (PCR) is

A. RNA polymerase

B. Ribonuclease

C. Taq polymerase

D. Endonuclease

Answer: C

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122. A good vector in genetic engineering is

A. Agrobacterium tumefaciens

B. bacillus thurinigiensis

C. bacillus amyloliquefaciens

D. Salmonella thphimurium

Answer: A

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123. Restriction enzyme ECoRI cleaves DNA at the sequence

A. AAGTTC

B. AAGTTC

C. GTATATC

D. GAATTC

Answer: D

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124. Thermal cycle is used in

A. Radioactivation

B. Chemical reaction

C. Polymerase chain reaction

D. Enzyme catalysed reaction

Answer: C

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125. What is true of plasmid

A. Found in viruses

B. Contian genes for vital activities

C. part of nuclear chromosome

D. Widely used in gene transfer

Answer: D

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126. The enzyme capable cutting DNA molecular at specific sites is

A. nuclease

B. Restriction edonuclease

C. Lipase

D. Ligase

Answer: B

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

A. Molecular cloning

B. Tissue culture

C. Protoplasmic fusion

D. Splicing

Answer: D

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128. 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

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129. Endonuclease is employed in

A. Transcription

B. Translation

C. genetic engineering

D. DNA replication

Answer: C

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130. Nucleic acid is fragmented by enzyme

A. Ligases

B. Proteases

C. Nucleases

D. Polymerases

Answer: C

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131. Bt cotton has been produced by

A. In situ hybridization of Bt gene

B. Northem blotting of Bt gene

C. Cloning of Bt gene

D. Southem blotting of Bt gene

Answer: C

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132. Introduction of genetically modified food is not desirable because

A. It will affect economically for 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

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133. In genetic engineering which is used for transfer to genes from one cell to another

A. Vector

B. Probe

C. Plasmid

D. virus

Answer: A

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134. Transgenic plants are plants having

A. No gene

B. Genes in transposition

C. Genes have no function of perform

D. Genes of an other organism

Answer: D

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135. Identify the vectore suitable for cloning long DNA fragments

A. Phage vector

B. Beacterial plasmid

C. yeast plasmid

D. Cosmids

Answer: D

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136. Introduction of foreign gene for improving genotype is

A. Tissue culture

B. Genetic engineering

C. Biotechnology

D. vernalization

Answer: B

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137. Removal and insertion of genes is

A. Genetic engineering

B. biotechnology

C. gene therapy

D. Cytogenetics

Answer: A

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138. The enzymes which are commonly used in genetic engineering are

A. Restriction endonuclease and polymerase

B. Exonuclease and ligase

C. Restrication endonuclease and ligase

D. Ligase and polymerase

Answer: C

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139. Genetic engineering is

A. making artificial genes

B. hybridization of DNA

C. making artificial limbs and diagnositc instruments

D. Production of alochol by using microorganisms

Answer: B

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140. Ti plasmid transforms cells of

A. Animals

B. plants

C. bacteria

D. fungi

Answer: B

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141. cDNA is

A. Circular DNA

B. Coiled DNA

C. cytoplasmic DNA

D. complementary DNA

Answer: D

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142. DNA segment cleaved by EcoRI is

A. GCTTAA, CGAATT

B. GAATTC, CTTAAG

C. GCTTAA,CGAATT

D. GTTCAA,CAAGTT

Answer: B

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

A. Transposon

B. Intron

C. Exon

D. Plasmid

Answer: D

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144. Restriction endonuclease are useful in

A. Breaking DNA at specific sites

B. Creating sticky ends

C. Both a and b

D. Crossing over

Answer: C

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145. DNA formed From RNA is

A. A DNA

B. B DNA

C. cDNA

D. Z DNA

Answer: C

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146. In transgenesis the expression of transgene in the target tissue is known by

A. Enhancer

B. Transgene

C. Promoter

D. Reporter

Answer: D

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147. Natural genetic engineer is

A. Pseudomonas putida

B. Agrobacterium tumefaciens

C. Escherichia coli

D. Bacillus subtilis

Answer: B

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148. Ti plasmid is used for making transgenic plats. It is obtained from

A. Azotobacter

B. Agrobacterium

C. Rhizobium in leguminous root

D. yeast

Answer: B

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149. Bt in popular Bt -Cotton stands for

A. biotechnology

B. Bacillus tomentosa

C. bacillus thuringiensis

D. Best type

Answer: C

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150. Widely used tool in genetic engineering of crop plants is an

A. Protoplast fusing

B. Transposon

C. Microinjection

D. Agrobacterium mediation

Answer: D

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151. An example of gene therapy is

A. Production of injectiable hapatitis B vaccine

B. Production of vaccines in food crop

C. Introduction of a adenosine deaminase gene in front affected with SCID

D. Production of test tube babies through artificial insemination and implantation

Answer: C

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152. Identify the plasmid

A. EcoRI

B. pBR322

C. Alu I

D. Hind III

Answer: B

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153. Polymerase chain reaction is useful in

A. DNA synthesis

B. DNA amplification

C. Protein synthesis

D. Amino acid synthesis

Answer: B

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154. The most extensively used bacterial in genetic engineering is

A. bacillus

B. Clostridium

C. Escherichia

D. Salmonella

Answer: C

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155. Fragment of DNA formed after treatment with endonucleases are separated by the technique

A. Polymerase chain reaction

B. southern blotting

C. colony hybridization

D. Electrophoresis

Answer: D

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156. DNA is generally methylated at

A. A-base

B. G-base

C. T-base

D. C-base

Answer: D

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157. In genetic engineering DNA fragments are joined through

A. Ligase

B. polymerase

C. helicase

D. Gyrase

Answer: A

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158. Introduction of transgenes will result in

A. Formation of a new species

B. Formention of a new protein

C. Alter a biosynthesis

D. Both b and C

Answer: D

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159. Flavr savr variety of Tomato is

A. High yielding hybrid variety

B. High yielding new variety

C. Transgenic

D. Polyploid

Answer: C

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160. Production of human protein in bacteria by genetic engineering is possible because

A. human chromosome replicate in bacterial cell

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

C. bacterial cell can underatke RNA splicing

D. Genetic code in universal

Answer: D

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161. Tumor inducing plasmid used in producing transgenic plants is that of

A. escherichia coli

B. Bacillus thuringienisis

C. Agrobacterium tumefaciens

D. Staphylococcus aureus

Answer: C

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162. Enzyme used in recombinant DNA technology (RDT) is

A. Ligases

B. Polymerase

C. Restrication endonuclease

D. helicases

Answer: C

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163. Golden rice wil help in

A. Producing petrol like fuel

B. pest resistance

C. herbicide tolerance

D. Alleviation of vitamin A deficiency

Answer: D

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164. Restriction endonuclease used widely in RDT are obtained from

A. Plasmids

B. Bacterial cells

C. bacteriophages

D. All prokaryotic cells

Answer: B

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165. SCID is caused by defective gene coding for enzyme

A. Adenosine deaminase

B. Adenosine transaminase

C. Adenosine transferase

D. Guanosine transaminase

Answer: A

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166. Herbicide resistant gene is

A. Ct

B. Mt

C. Bt

D. GST

Answer: D

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167. Vitamin A rich transgenic plant is

A. Flavr Savr Tomato

B. Golden rice

C. Bt cotton

D. Vaccinated Potato

Answer: B

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168. Restriction endonuclease are called molecular scissor so as they

A. Synthesize DNA

B. Restrict nuclear activity

C. cleave DNA intofragment

D. Break DNA at random

Answer: C

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169. A palnt expressing a gene from another organism is

A. Transgenic

B. Clone

C. somachlonal variant

D. Transformed

Answer: A

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170. Bt gene is got from

A. brassica napus

B. bacillus thuringiensis

C. Azolla

D. Rhizobium

Answer: B

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171. Recombinant DNA or rDNA technology was discovered by

A. Khorana

B. bateson and de Vries

C. Sutton and Avery

D. Cohen and Avery

Answer: D

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172. Genomic DNA library is

A. Packing of donor DNA in a collection of vectors

B. a collection of gene vectors

C. Collection of organisms for extracting DNA

D. A collector of literature about DNA

Answer: A

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173. A technique of deliberate manipulation of genes/transfer of gene to a different organism is

A. Gene therapy

B. Tissue culture

C. hybridoma technology

D. Genetic engineering

Answer: D

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174. Plasmids are used as vectors in genetic engineering because of their

A. Resistance to antibiotics

B. Resistance to restriction enzymes

C. Ability to carry foreign genes

D. Ability to cause infection in host

Answer: C

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175. Genetically engineered microorganism used successfully in bioremediation of oil spills in

A. Trichoderma

B. Xanthomonas

C. Bacillus

D. Pseudomonas

Answer: D

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176. First hormone produced artificially by culturing bacteria is

A. insulin

B. thyroxine

C. Testosterone

D. Adrenaline

Answer: A

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177. Construction of first recombinant DNA was done by using plasmid of

A. Salmonella typhimurium

B. Escherichia coli

C. bacillus tharingiensis

D. yeast

Answer: B

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178. Select DNA sequence which would act as a restriction site

A. AACCGG/TGGCC

B. GGTTGG/CCAACC

C. AAGGCT/TTCGA

D. CTGCAG/GACGTC

Answer: D

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179. In gel electrophoresis differential mobility of DNA depends upon

A. Helical nature of DNA

B. Double stranded nature of DNA

C. charge and size of DNA

D. Hydrogen bonding bewtwen bases

Answer: C

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180. Which one is cloning plasmid, not an expression plasmid

A. pBAD-180-Cam

B. pBcSK

C. pUC18

D. pET

Answer: C

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181. Bacteria protect themselves from viruses by fragmenting viral DNA with

A. Endonuclease

B. Exonuclease

C. Gyrase

D. Ligase

Answer: A

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182. The tehnique of productionof monoclonal antibodies was developed by

A. Wastosn and Crick

B. Milstein and Kohler

C. bentham and Hooker

D. Miescher

Answer: B

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183. In plant biotechnology, root tumors are induced by

A. Rhizobium

B. Agrobacterium tumfefaciens

C. Agrobacterium rhizogenes

D. Agrobacterium basilis

Answer: C

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184. A transgenic plant having higher storage protein is

A. Rice

B. Maize

C. tomato

D. Potato

Answer: D

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185. which is obtained from genetic engineering

A. Glucose

B. haemoglobin

C. Golden rice

D. None of the above

Answer: C

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186. Which is used in production of insulin by genetic engineering

A. Rhizobium

B. Saccharomyces

C. Mycobaterium

D. Escherichia

Answer: D

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187. Which one is not a biofertilizer

A. Azotobacter

B. Azolla

C. Bacillus thuringiensis

D. Clostridium

Answer: C

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188. Which is correctly matched

A. Central dogma - codon

B. RNA polymerase RNA primer

C. Okazaki fragements - splicing

D. Restriction enzyme -genetic engineering

Answer: D

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189. Golden rice is a variety rich in

A. B-Carotene

B. Lysine

C. Vitamin C

D. Biotin

Answer: A

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190. Which of the following has not been synthesized by DNA technology?

A. Insulin

B. Haemoglobin

C. Somatostatin

D. Interferon

Answer: B

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191. Disorder in which B-lymphocytes and T-lymphocytes are not formed in

A. AIDS

B. SCID

C. Cystic fibrosis

D. Muscular dystrohy

Answer: B

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192. Transgenic hirudin is obtained from

A. Ocimum sanctum

B. Brassica napus

C. potato

D. Tomato

Answer: B

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193. In cloning experiment cDNA molecules can be obtained from mRNA copy by

A. Polymersae chian reaction

B. Reverse transcriptase

C. ribozyme

D. DNA-RNA hybridisation

Answer: B

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194. Which is employed for synthesis of monoclonal antibody by hybridoma technique

A. RBC

B. Liver cells

C. tumour cells

D. nerve cells

Answer: C

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195. Restriction enzymes are also called

A. Molecular marker

B. Vectors

C. carriers

D. Molecular scissors

Answer: D

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196. Isolation of Bt gene from bacterium Bacillus thuringiensis was undertaken in year

A. 1977

B. 1980

C. 1997

D. 1990

Answer: B

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197. Which of these is used as vector for therapy in SCID?

A. Retrovirus

B. Enterovirus

C. Arbovirus

D. Rotavirus

Answer: A

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198. Product of biotechnology is

A. Transgenic crop

B. Biofertilizer

C. Humulin

D. All the above

Answer: D

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199. Which is used in recombinant DNA technology?

A. Virus

B. Capsid of virus

C. Cell wall of virus

D. Gene which produce capsid of virus

Answer: B

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200. 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

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Choose More Than One Correct Answers

1. which of the following food products are obtained through conventional biotechnology?

A. Curd

B. Roti

C. Idli

D. Cheese

Answer: A::C::D

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2. Which of the techniques are apart of recombinant DNA technology?

A. genetic engineering

B. Gene cloning

C. Blotting

D. hybridization

Answer: A::B::D

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3. Which of the following are required for gene cloning by PCR?

A. yeast cell

B. Taq polymerse

C. dNTPs

D. ddNTPs

Answer: B::C

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4. Reverse transcription was discovered by whom?

A. Warner arber

B. stanley cohen

C. Tamin

D. David baltimore

Answer: C::D

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5. Which type of cuts are produced by restriction enzymes in DNA molecules?

A. Zigzag

B. Blunt

C. Sharpey-schafer

D. sticky

Answer: B::D

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6. which of the following restriction enzymes produce sticky ends

A. Bam HI

B. EcoRV

C. EcoRI

D. Hind III

Answer: A::C::D

Watch Video Solution

7. The most commonly used plasmid vectors are

A. pUC19

B. pSC101

C. pBR322

D. pLR5

Answer: A::C

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8. DNA sequencing techniques were given by

A. Sanger

B. Gilbert

C. wanger

D. Maxam

Answer: A::B::D

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9. Mention the medicines produced through biotechnology

A. Interferon

B. Bt cotton

C. Insulin

D. Antibiotic

Answer: A::C::D

Watch Video Solution

10. Mention the attenuated vaccine from the following

A. Rubella vaccine

B. Titenus vaccine

C. Mumps vaccine

D. Cholera vaccine

Answer: A::C

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Fill In The Blanks

1. _____ is used as a medicine for breast cancer.

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2. Penicillin was discovered by ____ in _____.

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3. Nocardiosis lefun duran produces_____

Watch Video Solution

4. PCR was invented by _____.

Watch Video Solution

5. Stanely cohen and Robert Boyer developed a plasmid _____

Watch Video Solution

6. In 1970 _____ discovered the reverse transcriptase enzyme .

Watch Video Solution

7. _____ discovered the enzyme EcoRI.

Watch Video Solution

8. Restriction enzyme cutting the same recognition site are called___.

Watch Video Solution

9. Recognition site of EcoRI is ____

Watch Video Solution

10. Taq polymerase is obtained from ____

Watch Video Solution

Mention True Of False

1. DNA ligase is used to join the cut ends of DNA.

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2. Taq polymerase becomes inactive at 90C

Watch Video Solution

3. RNAase is used to cleave DNA.

Watch Video Solution

4. Endonuclease can cleave both RNA and DNA.

Watch Video Solution

5. Plasmids carry marker genes .

Watch Video Solution

6. YAC is derived from bacteria.

Watch Video Solution

7. An ideal plasmid can carry DNA upto 15kb.

Watch Video Solution

8. Conjugation involves two opposite strains of bacteria

Watch Video Solution

9. Karry Mullis discovered PCR in 1983

Watch Video Solution

10. Sanger method of DNA sequencing involves ddNTPs.

Watch Video Solution

Very Short Answer Type Question

1. Name the food product which is prepared from bamboo.

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2. Give an application of conventional biotechnology.

Watch Video Solution

3. Name the products of genetic engineering which is used in breast cancer treatment.

Watch Video Solution

4. When was penicillin discovered and by whom?

Watch Video Solution

5. Name the branch of biotechnology dealing with harvesting of minerals from mines.

Watch Video Solution

6. What is a plant cell without the cell wall called?

Watch Video Solution

7. When was the first hybridoma produced?

Watch Video Solution

8. Who first discovered the restriction endonuclease?

Watch Video Solution

9. Which endonuclease enzyme did Boyer isolate in 1969?

Watch Video Solution

10. Which was the first plasmid vector produced by recombinant DNA technology?

Watch Video Solution

11. Who were the discoverers of reverse transcriptase enzyme ?

Watch Video Solution

12. Who discovered PCR technique?

Watch Video Solution

13. Give restriction sequence of EcoRI restriction enzyme.

Watch Video Solution

14. Name the source organism of Hind III restriction enzyme.

Watch Video Solution

15. which is the source organism of taq polymerase?

Watch Video Solution

16. Name the product of LacZ gene .

Watch Video Solution

17. Name a widely used constructed plasmid vector.

Watch Video Solution

18. What is the capacity of a cosmid vector for a DNA insert?

Watch Video Solution

19. What length of DNA fragment can be transferred using a YAC?

Watch Video Solution

20. P element is found in which organism?

Watch Video Solution

21. Name the component by which DNA can be synthesized without the help of DNA template.

Watch Video Solution

22. How can the restriction fragnents be seprarated?

Watch Video Solution

23. Name a method by which a bacterial cell can be made competent for transformation.

Watch Video Solution

24. What is the other name of PCR machine?

Watch Video Solution

25. Name the popular method of sequencing DNA used now-a-days?

Watch Video Solution

26. Who discovered the dideoxy chain termination method of sequencing DNA?

Watch Video Solution

27. Write the full form of GEAC.

Watch Video Solution

28. Name the gene responsible for production of Bt protein.

Watch Video Solution

29. Write the full form of TKDL.

Watch Video Solution

30. Name the regulatory principles that the WTO countries

Watch Video Solution

Short Answer Type Questions

1. What is chhurpi?

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2. what kind of food is mesu?

Watch Video Solution

3. Define biotechnology.

4. What is hybridoma?

5. What are isoschizomers?

6. What does the first three letters represent is EcoRI?

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7. What are the features of the first cloning vector pSC101?

Watch Video Solution

8. What do you mean by electroporation?

Watch Video Solution

9. What are the types of gene cloning methods used?

Watch Video Solution

10. What is cDNA?

Watch Video Solution

11. Southern blotting is used to separate DNA fragments what is the use of western and northern blotting?

Watch Video Solution

12. How does electroporation causes DNA uptake is a cell?

Watch Video Solution

13. How can inactivated virus act as vaccines?

Watch Video Solution

14. name at least two statudtoy bodies concerning about the biosafety issues in biotechnology.

Watch Video Solution

15. Name at least two guidelines against biotechnological products.

Watch Video Solution

16. Mention the principle that is followed in biotechnology.

Watch Video Solution

17. Give an example of successful genetic fusion and its results that has been observed.

Watch Video Solution

18. How are monoclonal antibodies produced? Explain with the help of a diagram

Watch Video Solution

19. What are the various types of tools needed in Recombinant DNA technology. Give examples of each.

Watch Video Solution

20. What are types of cleavage ends produced by endonuclease enzyme?

Watch Video Solution

21. How are restriction endonuclease enzyme named? Explain with example.

Watch Video Solution

22. what are the common features of vector?

Watch Video Solution

23. what are marker genes? Give example.

Watch Video Solution

24. Mention the advantage of PCR method of gene cloning.

Watch Video Solution

25. Write the limitations of gene amplification done by PCR.

Watch Video Solution

26. Write a short account on cDNA library.

Watch Video Solution

27. Describe the gene transfer method done by Ti plasmid of Agrobacterium tumfaciens.

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28. Give at least three application of biotechnology in the field of medicine along

with its uses.

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29. Write the different aims of biosafety rules in biotechnology.

Watch Video Solution

30. Mention the conditions that are to be fulfilled to obtain patent for a certain invention.

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31. Compare the advantages and disadvantages of patenting.

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Long Answer Type Question

1. Describe the cell mediated gene cloning method with the help of a proper diagram.

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2. The gene cloning can also be done in vitro. Give the method, its requisites and particulars with tht help of a diagram.

Watch Video Solution

3. How can the cloned DNA fragments be separated Explain the process.

Watch Video Solution

4. Describe in brief the rocess of southern blotting.

Watch Video Solution

5. Describe wit a proper diagram the process of dideoxy chain termination method of sequencing.

Watch Video Solution

6. State at least five aexample of biotechnilogy in the field of agriculture and their effects.

Watch Video Solution

7. Describe the mechanism of production of effective insulin in man.

Watch Video Solution

8. State the different example which are considers as acts of biopiracy in india.

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