

BIOTECHNOLOGY

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| <p>1. Which of the following is not concerned with biotechnology
 (a) Biogas production (b) Sewage treatment
 (c) Biofertilizers (d) Wood seasoning</p> <p>2. Genetic engineering means
 (a) experiments on tissue culture
 (b) manipulation of chromosomes
 (c) manipulation of genes
 (d) producing completely new types of genes</p> <p>3. Which of the following organelles is related to genetic engineering?
 (a) Plastids (b) Plasmids
 (c) Mutations (d) Hybrid vigour</p> <p>4. Genetic engineering is possible because
 (a) the phenomenon of transduction in bacteria is well understood
 (b) restriction endonuclease purified from bacteria can be used in vitro
 (c) we can see DNA at specific sites by endonuclease like DNAase I
 (d) we can see DNA by electron microscope</p> <p>5. Two bacteria found to be very useful in genetic engineering experiments are
 (a) Nitrosomonas and Klebsiella
 (b) Nitrobacter and Azotobacter
 (c) Rhizobium and Diplococcus
 (d) Escherichia and Agrobacterium</p> <p>6. The polymerase chain reaction (PCR) is a powerful technique to
 (a) mutate genes
 (b) amplify genes
 (c) inhibit DNA synthesis
 (d) induce protein synthesis</p> | <p>7. Advancement in genetic engineering has been possible due to
 (a) oncogenes (b) exonucleases
 (c) transposons (d) endonucleases</p> <p>8. What is true of plasmids?
 (a) They are found in viruses
 (b) They are main parts of chromosomes
 (c) They are widely used in gene transfer
 (d) they contain genes for vital activities</p> <p>9. Apart from DNA in the bacterial nucleoid, there is a circular extrachromosomal DNA called
 (a) plasmid
 (b) mesosome
 (c) chromosome
 (d) none of these</p> <p>10. Artificial synthesis of DNA was done by
 (a) Wilkinsons (b) Kornberg
 (c) Franklin (d) Watson & Crick</p> <p>11. In the process of recombinant DNA technology, the isolated foreign DNA is inserted into another DNA molecule known as
 (a) DNA vector
 (b) RNA vector
 (c) protein vector
 (d) cloning vector</p> <p>12. The technique for breakage of DNA fragment and inserting it into another DNA molecule, is related to
 (a) gene splicing
 (b) gene cloning
 (c) gene typing
 (d) DNA finger printing</p> |
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| <p>13. To prevent recirculation of vector DNA and to increase the frequency of production of recombinant DNA technology</p> <p>(a) reverse transcriptase is used
(b) alkaline phosphates are used
(c) acid phosphatases are used
(d) all of them can be used</p> <p>14. The first successfully cloned mammal (animal) that gained worldwide publicity was</p> <p>(a) Molly (a sheep)
(b) Polly (a sheep)
(c) Chance (a bull)
(d) Dolly (a sheep)</p> <p>15. Ligase helps in</p> <p>(a) removal of few gene
(b) translation
(c) inserting few genes in DNA
(d) bringing transversion in chromosomes</p> <p>16. Who synthesized complementary DNA and viral DNA template with the help of metal ions and DNA polymerase enzyme?</p> <p>(a) Hargobind Khorana
(b) Kornberg
(c) Nirenberg
(d) Ochoa</p> <p>17. Which of the following is not a genetic vector?</p> <p>(a) Plasmid (b) Phage
(c) Cosmid (d) Virusoid</p> <p>18. "Molecular Scissors" used in genetic engineering is</p> <p>(a) DNA polymerase
(b) DNA ligase
(c) restriction endonuclease
(d) helicase</p> | <p>19. Construction of a recombinant DNA involves</p> <p>(a) cleaving and rejoining DNA segments with 'endonuclease' alone
(b) cleaving DNA segments with 'endonuclease' and rejoining them with 'ligase'
(c) cleaving DNA segments with 'ligase' and rejoining them with 'endonuclease'
(d) cleaving and rejoining DNA segments with 'ligase' alone</p> <p>20. There is a specific DNA sequence in the chromosome that is responsible for initiating</p> <p>(a) transcription
(b) replication
(c) translation
(d) recombination</p> <p>21. Cutting of DNA at specific location by restriction enzymes is popularly called "molecular scissors". The cut piece of DNA is linked with the plasmid DNA called</p> <p>(a) reactor (b) vector
(c) inverter (d) protractor</p> <p>22. Which type of restriction enzymes are used in recombination DNA technology?</p> <p>(a) Type - I (b) Type - II
(c) Type - III (d) All of the above</p> <p>23. The first restriction endonuclease was:</p> <p>(a) EcoRII (b) Hind - II
(c) Hind - III (d) Ava I</p> <p>24. Taq polymerase enzyme is used in</p> <p>(a) restriction mapping
(b) gene cloning
(c) PCR
(d) all of these</p> |
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25. A gene carried by recombinant DNA is cloned when:
- its host bacterium divides by binary fission
 - it is transcribed
 - it is fragmented by restriction enzymes
 - it is hybridized
26. Plasmids are used in genetic engineering because they are
- easily available
 - able to replicate
 - able to integrate
 - inert
27. Cloning is a means to
- replace original genotype
 - preserve genotype
 - production of high degree in *Escherichia coli*
 - none of the above
28. The palindromes are groups of letters that form the..... when read in both direction forward and backward
- different words
 - same words
 - alternative words
 - Both (a) and (b)
29. Which of the following is restriction endonuclease?
- Lipase
 - Amylase
 - AluI
 - Anhydrase
30. The first artificial cloning vector was:
- pBR322
 - M13
 - phagemid vectors
 - cosmid vectors
31. Ligases catalyse the formation of bonds between
- C = O
 - C = C
 - C - H
 - H - H
32. VNTRs are
- variable number of tandem repeats
 - very narrow tandem repeats
 - variable noncoding transposon repeats
 - valuable non-coding transposonic regions
33. Giant mouse has been produced through
- tissue culture
 - gene differentiation
 - gene manipulation
 - all of the above
34. Hirudin is
- a protein produced by *Hordeum vulgare*, which is rich in lysine
 - a toxic molecule isolated from *Gossypium hirsutum*, which reduced human fertility
 - a protein produced from transgenic *Brassica napus*, which prevent blood clotting
 - an antibiotic produced by a genetically engineered bacterium *Escherichia coli*
35. Which of the following bacteria has found extensive use in genetic engineering work in plants/Best genetic vector used in plants?
- E. coli*
 - Xanthomonas citri*
 - Bacillus thuringiensis*
 - Agrobacterium tumefaciens*
36. Polymerase chain reaction is most useful in
- DNA synthesis
 - DNA amplification
 - Protein synthesis
 - Amino acid synthesis
37. Crown gall disease in plants is caused by
- Ti plasmid
 - Pi plasmid
 - Bacteria
 - Virus

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| 38. The tumor inducing capacity of <i>Agrobacterium tumefaciens</i> is located in large extra-chromosomal plasmids called
(a) Ri plasmid (b) lambda phage
(c) pBR 322 (d) Ti plasmid | 45. Term "Humulin" is used for:
(a) Human insulin
(b) Isoenzyme
(c) Hydrolytic enzyme
(d) Antibiotic |
| 39. Restriction endonucleases used in RDT are obtained from
(a) plasmids (b) Bacterial cell
(c) Bacteriophages (d) All prokaryotes | 46. Modified antibiotics are manufactured by the technique of:
(a) Ultrafiltration
(b) Ultracentrifugation
(c) Vernalization
(d) Genetic engineering |
| 40. Viral genome incorporated into host DNA is called
(a) prophage (b) Prophage
(c) bacteriophage (d) none | 47. The cells obtained from the cancerous tumours are:
(a) Hybridomas (b) Myelomas
(c) Monoclonal cells (d) Lymphocytes |
| 41. Vaccines produced by conventional techniques are called:
(a) First generation vaccines
(b) Second generation vaccines
(c) Third generation vaccines
(d) None of these | 48. Hepatitis-B vaccines is a:
(a) First generation vaccine
(b) Second generation vaccine
(c) Third generation vaccine
(d) None of these |
| 42. Where is National Institute of Immunology located:
(a) Mumbai (b) New Delhi
(c) Chennai (d) Lucknow | 49. Humulin is a/an:
(a) Fat (b) Acid
(c) Carbohydrate (d) Protein |
| 43. The first genetically engineering human insulin was produced in:
(a) 1980 (b) 1983
(c) 1990 (d) 1993 | 50. Transgenic animal has:
(a) Foreign DNA in all its cells
(b) Foreign RNA in all its cells
(c) Foreign DNA in some of the cells
(d) Both (b) and (c) |
| 44. One of the following inhibits the growth of viruses:
(a) Antibiotics (b) Interferons
(c) Antibodies (d) Vitamins | |

ANSWERS KEY

1	D	11	D	21	B	31	A	41	A
2	C	12	B	22	B	32	D	42	B
3	B	13	B	23	B	33	C	43	B
4	B	14	D	24	C	34	D	44	B
5	D	15	C	25	A	35	D	45	A
6	B	16	B	26	B	36	B	46	D
7	D	17	D	27	B	37	A	47	B
8	C	18	C	28	B	38	D	48	B
9	A	19	B	29	C	39	B	49	D
10	B	20	B	30	A	40	B	50	A