

Admission Test

1. Isoschizomers are two different enzymes which recognize the same sequence, isolated from
 - a. same source
 - b. different sources
 - c. both of above
2. The process of introducing purified DNA into a mammalian cell is called
 - a. transduction
 - b. transformation
 - c. transfection
3. The egg is placed into a Petri dish where it develops into embryonic stem cells, which have shown potentials for treating several ailments. This technique is known as
 - a. Therapeutic cloning
 - b. Stem cell cloning
 - c. Embryo cloning
 - d. All of above
4. The ancient type of biotechnology is known as
 - a. Genetic engineering
 - b. Breeding
 - c. None of above
5. The expression vectors can be used in biotechnology which are based on
 - a. Plasmids
 - b. Retro viruses
 - c. YAC
6. Modified tumor induced (Ti) plasmid is used for cloning in
 - a. Humans
 - b. Animals
 - c. Plants
7. The DNA double helix is stabilized by
 - a. Hydrogen bonding
 - b. Transcription factors
 - c. Nucleotide
8. Phenylketonuria is a genetic disease which can be treated through
 - a. phenylalanine hydroxylase
 - b. phenylalanine ammonia lyase
9. The method which separates proteins based on their primary structure or size but not amino acid sequence
 - a. PAGE
 - b. SDS
 - c. both of above
10. In order to denature the DNA, a gel is subjected to
 - a. Sodium bath
 - b. capillary action
 - c. DNase

11. If mutation generates or removes any RFLP site then it could be identified by
 - a. Northern blotting
 - b. PCR
 - c. None of above
12. The transfer buffer used for the blotting lowers the annealing temperature of the probe-RNA interaction, usually contains
 - a. Urea
 - b. Tris-base
 - c. formamide
13. ELISIA formats require the separation of reacted from unreacted material
 - a. Homogenous EIA
 - b. Indirect ELISA
 - c. None of above
14. Mostly FISH consists of molecular probes specific for
 - a. Chromosomes
 - b. Amino acid
 - c. None of above
15. In western blotting, the proteins are transferred to a membrane where they are probed using
 - a. Nucleotides
 - b. Antibodies
 - c. Proteins
16. Electrophoresis allows the separation of fragments based on
 - a. Size of molecule
 - b. Shape of molecule
 - c. None of above
17. Gene knockout method helps to determine the developmental and physiological consequences
 - a. Deactivating a particular gene
 - b. Activating a particular gene
 - c. Initiating transcription
18. The most definitive form of molecular characterization of a cloned piece of DNA is its
 - a. Position
 - b. Nature
 - c. None of above
19. Neuroamines that play very important role in memory is
 - a. Dopamine
 - b. Serotonin
 - c. Acetylcholine
 - d. None of above
20. Amines interact with their binding site through
 - a. Hydrogen bonding
 - b. ionic bonding
 - c. none of these

21. Drug stability could be effected due to
 - a. stereo configuration
 - b. metabolism
 - c. both
22. Solutions with a hydrogen ion concentration greater than 10^{-7} mole/litre are called
 - a. acidic
 - b. basic
 - c. Alkaline
23. The vector that can be utilized to detect gene and then map them on to the human chromosome is known as
 - a. YAC
 - b. BAC
 - c. Plasmid
24. Biotechnology is a broad term that applies to the use of
 - a. Living organisms
 - b. Plants
 - c. Algae
25. Green revolution came when varieties of staple food crop were increased through breeding in
 - a. 1960s
 - b. 1978
 - c. 1990
26. Genes are directly expressed for desired traits and can be identified more quickly through a technology known as
 - a. Biotechnology
 - b. Gene technology
 - c. Nanotechnology
 - d. None of above
27. Gene library contains whole genome of any organism present in form of
 - a. clones
 - b. vectors
 - c. elements
28. Structural genes which constitute the whole chromosome are present in
 - a. Prokaryotes
 - b. Eukaryotes
 - c. both of above
29. Artificial plasmid PBR322 was generated artificially with properties having
 - a. restriction sites
 - b. restriction sites
 - c. restriction sites
30. Immunoglobulin protein can be hybridized with domain of
 - a. Nucleotides
 - b. Proteins
 - c. None of above

31. Which of the following molecules move regularly from the nucleus to the cytoplasm?
 - a. Glycogen
 - b. DNA
 - c. RNA
 - d. Cholesterol
32. These enzymes have different structure but the same catalytic function. Frequently they are oligomers made from different polypeptide chains. These enzymes are called:
 - a. Allosteric enzymes
 - b. Isozymes
 - c. Lyases
 - d. Proenzymes
33. The enzyme that cuts the bonds of DNA molecule at the origin of replication is
 - a. Endonuclease
 - b. DNA polymerase
 - c. DNA gyrase
 - d. DNA ligase
34. Which of the following enzyme is required to release the tension imposed by uncoiling of strands?
 - a. Endonuclease
 - b. DNA ligase
 - c. DNA gyrase
 - d. DNA helicase
35. Formation of mRNA from DNA is called
 - a. Transformation
 - b. Transduction
 - c. Translation
 - d. Transcription
36. Which of the following is not tool of genetic engineering?
 - a. Vectors
 - b. Enzymes
 - c. Foreign DNA
 - d. GMO
37. Eco RI is an
 - a. Ligase
 - b. Polymerase
 - c. Restriction enzyme
 - d. Gyrase
38. The transgenic plant flavr savr tomato carries an artificial gene for
 - a. Delay ripening process
 - b. Longer shell life
 - c. Added flavours
 - d. All of these

39. Bt Cotton is
- Cloned plant
 - Transgenic plant
 - Hybrid plant
 - Mutated plant
40. Dolly sheep was genetically similar to
- The mother from which nucleated fertilized egg was taken
 - The mother from which nuclear DNA of udder cell was taken
 - The surrogate mother
 - Both surrogate mother and nuclear donor mother
41. Genome is
- Genes on nuclear DNA
 - Nuclear DNA + mitochondrial DNA
 - Nuclear DNA + chloroplast DNA
 - Nuclear DNA + Mitochondrial DNA + Chloroplast DNA
42. The complete set of chromosomal and extrachromosomal genes of an organisms is called
- Genome
 - Gene pool
 - Gene bank
 - Gene library
43. The study of all the proteins coded by the genome is called
- Proteome
 - Proteomics
 - Genome
 - Protein formation
44. Sequencing of genomic DNA is included under
- Structural genomics
 - Functional genomics
 - Proteomics
 - Transgenesis
45. In forensic science which of the following is used?
- Bacterial cloning
 - DNA foot printing
 - DNA fingerprinting
 - DNA cloning
46. Variations observed during tissue culture of some plants are known as
- Clonal variations
 - Somatic variations
 - Somaclonal variations
 - Tissue culture variations
47. Virus free plants can be obtained through
- Antibiotic treatment
 - Bordeaux mixture
 - Root tip culture
 - Shoot tip culture

48. Raising of plants from a small tissue in culture is known as
 - a. Macroproduction
 - b. Micropropagation
 - c. Tissue culture
 - d. Mass production
49. Callus is
 - a. Tissue that forms embryo
 - b. an insoluble carbohydrate
 - c. Unorganised actively dividing mass of cells maintained in culture
 - d. Tissue that grow to form embryoid
50. Biopatents are
 - a. Right to use invention
 - b. Right to use biological entities
 - c. Right to use products
 - d. Right to use process
51. Biopiracy means
 - a. Use of biopatents
 - b. Thefts of plants and animals
 - c. Stealing of bioresources
 - d. Exploitation of bioresources without authentic permission
52. Three dimensional shape of tRNA is
 - a. L-shaped
 - b. Clover leaf-like
 - c. X-shaped
 - d. Y-shaped
53. Enzymes consist of chains of
 - a. fatty acids.
 - b. Nucleotides
 - c. amino acids
 - d. carbohydrates
54. The role of an enzyme in a chemical reaction is to
 - a. emulsify fats
 - b. prevent denaturation
 - c. speed up the reaction
 - d. buffer any acids or bases
55. Enzymes function to increase the rate of a metabolic reaction by
 - a. denaturing the substrate
 - b. adding energy to the reaction.
 - c. decreasing the energy of activation
 - d. increasing the concentration of the reactants
56. Animal culture was first successfully undertaken by
 - a. Ross Harrison.
 - b. Enders
 - c. W.S. Sutton
 - d. All of the above

57. The starting point for all plant tissue culture is , called
- Meristem
 - Root
 - Explant
58. Extracellular matrix is composed of
- Protein fibres, ground substance and tissue fluid
 - DNA and ribosomes involved in protein synthesis
 - Connective tissue
59. Albumin act as the
- Carrier protein
 - Fibrous protein
 - Support protein
60. Which antibody present at very low level in serum.
- IgG
 - IgA
 - IgE
61. As the wave length of the light is shorter the resolution will be
- greater
 - smaller
 - No effect
62. Which of the method is not the method of horizontal gene transfer
- Binary fission
 - conjugation
 - transduction
 - transformation
63. Lense which direct the light rays through the specimen called
- Object lense
 - Ocular lense
 - Condenser lense
 - Illuminator
64. Blood agar is a
- Selective medium
 - Complex medium
 - Oxidative medium
 - Differential medium
65. Commonly used protein supplements added in medium are
- Feutin and Fibronectin
 - Biotin and Choline
 - Folic acid
66. Animals store energy in the form of
- Cellulose
 - Glycogen
 - Starch

67. Fibrous proteins are
- Soluble in water
 - Not soluble in water
 - None of above
68. Transferrin is involved in the
- Transport of oxygen
 - It transfers metals into Ions
 - Transport of Iron
69. Blood plasma has the pH
- 0.5
 - 1
 - Non of above
70. Apoenzyme combines with the Cofactor to form
- Haloenzyme
 - Isozyme
 - None of above
71. 4- hydroxyproline is found in
- Cell membrane
 - Cell wall
 - Cytosol
72. The nucleotides that do not encode any amino acid act as stop codons
- UAA UGU and UAG
 - UAT UGU and UAG
 - UAA, UGA, and UAG
 - Both b&c
73. First tRNA connected at which site on the ribosome.
- A site
 - P site
 - Can be connected to any site
74. At the end of transcription Rh factor binds to RNA at specific site known as
- Termination site.
 - Rust site
 - Rut site
75. DNA replication is
- Conservative
 - Semi conservative
 - Dispersive
76. The TATA box is located in the
- Splice enhancer
 - Intron-exon border
 - Promoter
 - Poly-A addition site
77. The molecular formulae of deoxyribose sugar and ribose sugar respectively are
- $C_5 H_{10} O_4$ and $C_5 H_{10} O_6$
 - $C_5 H_{10} O_4$ and $C_5 H_{10} O_5$
 - $C_5 H_{10} O_5$ and $C_5 H_{10} O_4$
 - $C_5 H_{10} O_5$ and $C_6 H_{10} O_4$

78. The nitrogen bases which pair with two hydrogen bonds are
- Adenine and thymine
 - Adenine and Cytosine
 - Cytosine and guanine
 - Cytosine and adenine
79. DNA molecules makes a complete turn after every
- 20 Å
 - 34 Å
 - 3.4 Å
 - 10 base pairs
80. The distance between two successive nitrogenous base pairs is
- 34 Å
 - 36 Å
 - 20 Å
 - 3.4 Å
81. In nucleoside, nitrogen base is attached to pentose sugar at
- Carbon – 1 of pentose sugar
 - Carbon – 2 of pentose sugar
 - Carbon – 4 of pentose sugar
 - Carbon – 5 of pentose sugar
82. If the strand of DNA has 35 nucleotide how many phosphodiester bonds would exist
- 34
 - 35
 - 24
 - 70
83. In eukaryotic DNA replication, lagging strand is formed by
- RNA fragments
 - Okazaki fragments
 - DNA fragments
 - Nucleotide fragments
84. During DNA replication, the reunion or recoiling of separated DNA strand is prevented by
- Helix destabilizing protein
 - Single strand binding protein
 - Rep protein
 - Both (A) and (B)
85. What is the one-letter code for glutamine?
- Q
 - G
 - H

- d. M
86. The cellular composition of m-RNA is
- 5-10%
 - 3-5%
 - 10-20 %
 - 70-80%
87. The codons which may present at 3' end of mRNA
- UAA
 - UAG
 - UGA
 - Any one of these
88. Nif gene' for nitrogen fixation is cereal crops like wheat, jowar etc. is introduced by cloning
- Rhizobium meliloti
 - Bacillus thuringiensis
 - Rhizopus
 - Rhizophora
89. Similarity between DNA and RNA is that both have
- Similar sugars
 - Similar mode of replication
 - Similar pyrimidines
 - Polymers of nucleotides
90. The basic unit of a nucleic acid is
- Pentose sugar
 - Nucleoid
 - Nucleoside
 - Nucleotide
91. In a DNA molecule cytosine is 18%. Percentage of adenine would be
- 32%
 - 64%
 - 36%
 - 18%
92. In double helix of DNA, the two DNA strands are
- Coiled around a common axis
 - coiled around each other
 - coiled differently
 - Coiled over protein sheath
93. Initiation codon of protein synthesis (in eucaryotes) is
- GUA
 - GCA
 - CCA
 - AUG
94. Nucleotides present in one turn of DNA helix
- 4
 - 8

- c. 10
d. 9
95. During protein synthesis, peptide bonds are formed at the
a. nucleus.
b. nucleolus.
c. lysosomes.
d. ribosomes
96. An operon consists of structural genes, regulatory genes,
and control genes.
a. True
b. False
97. Expressed properties such as whether you have blue eyes
and curly hair
a. genotype
b. exons
c. introns
d. phenotype
98. What is the promotor site?
a. The site where RNA polymerase binds to DNA
b. The site where RNA polymerase binds to protein
c. The site where RNA polymerase binds to free nucleotides
d. The site where RNA polymerase binds to AAA
99. What is the term for genes that are similar to each other
because they originated from a common ancestor?
a. Homolog
b. Ortholog
c. Polymorph
d. Paralog
100. Tay-Sachs disease is caused by deficiency of
a. Alpha-L-iduronidase
b. Glucose-6-phosphatase
c. Hexosaminidase A
d. Homogentisic acid oxidase