

1. Antimicrobial proteins that inhibit the synthesis of outer membrane proteins of gram negative bacteria
A) Dystrophin B) Attacins
C) Phytoanticipins D) Fungistatic

2. Which alga is known as sea lettuce?
A) *Fucus* B) *Caulerpa*
C) *Ulva* D) *Padina*

3. The peat moss belongs to the order
A) Sphagnales B) Andreaeales
C) Bryales D) Anthocerotales

4. Pyrenolichens fall under
A) Discolichens B) Ascolichens
C) Basidiolichens D) Deuterolichens

5. The most advanced parallel-banded stele in the Pteridophyta
A) Haplostele B) Plectosteles
C) Actinostele D) Mixed protostele

6. Which among the following is a tree fern?
A) *Pteris* B) *Cyathea*
C) *Adiantum* D) *Dryopteris*

7. Resting spores are called
A) Siderospore B) Statospore
C) Planospore D) Phialospore

8. Planktons smaller than 20µm but larger than 2µm are called
A) Nanoplanktons B) Picoplanktons
C) Periphyton D) Macroplankton

9. The genus *Rhizopus* belongs to the family
A) Mucoraceae B) Saccharomycetaceae
C) Pilobolaceae D) Rhodomycetaceae

10. Amanita toxins are
A) Ergotoxins B) Aflatoxins
C) Mushroom toxins D) Esterogonic toxins

11. A substance that increases the potency of an immunogen
A) Axoneme B) Adjuvant
C) Aptamer D) Agameon

12. Small non-antigenic molecules in an immunogen
 - A) Zymogens
 - B) Haptens
 - C) Co-factors
 - D) Aptamer

13. Bacterial cells that lack chromosomes are called
 - A) Microcells
 - B) Minicells
 - C) Maxicells
 - D) Midicells

14. Mycotoxin produced by *Aspergillus flavus*
 - A) Phytoalexin
 - B) Amphylotoxin
 - C) Aflatoxin
 - D) Dystrophin

15. 'Boll rot' of cotton is caused by
 - A) *Agaricus*
 - B) *Penicillium*
 - C) *Puccinia*
 - D) *Rhizopus*

16. *Puccinia graminis tritici* occurring on the wheat crop is also named as
 - A) Orange rust
 - B) Black rust
 - C) Yellow rust
 - D) Green rust

17. Blast disease of rice is caused by
 - A) *Piricularia oryzae*
 - B) *Pseudomonas oryzae*
 - C) *Sclerotium oryzae*
 - D) *Helminthosporium oryzae*

18. The antibiotic streptomycin was isolated from
 - A) *Streptomyces griseus*
 - B) *Streptomyces venezuele*
 - C) *Streptomyces aureofaciens*
 - D) *Streptomyces rimosus*

19. The 'tumour inducing' plasmids are present in
 - A) *Agrobacterium rhizogenes*
 - B) *Agrobacterium tumifaciens*
 - C) *Acetobacter aceti*
 - D) *Azotobacter sp.*

20. The infectious agent of 'scrapie' is
 - A) Parvovirus
 - B) Reovirus
 - C) Prion
 - D) Retrovirus

21. A dead area in the bark or cortex of the stem especially of woody plants is called
 - A) Spot
 - B) Canker
 - C) Scorch
 - D) Die-back

22. Ratoon stunting disease of sugarcane is
 - A) Insect transmitted
 - B) Soil transmitted
 - C) Sap transmitted
 - D) Root transmitted

23. Red rot of Sugarcane is caused by
 A) *Piricularia oryzae* B) *Colletotrichum falcatum*
 C) *Xanthomaonas Oryzae* D) *Phytophthora infestans*
24. Level of taxonomic study concerned with the biological aspects of taxa, including intraspecific populations, speciation, evolutionary rates and trends
 A) Alpha taxonomy B) Beta taxonomy
 C) Gamma taxonomy D) Theta taxonomy
25. The term 'Unitegmic' refers to
 A) An ovule having a single integument
 B) A filament with a single anther
 C) A fruit with a single seed
 D) A style with a single stigma
26. Labellum in Orchidaceae comes to anterior side by the twisting of the ovary through 180°. This process is called
 A) Adnation B) Articulation
 C) Resupination D) Attenuation
27. The Commelinaceae family is commonly known as the
 A) Spiderwort family B) Aster family
 C) Grass family D) Lilli family
28. *Foeniculum vulgare* belongs to the family
 A) Rutaceae B) Meliaceae
 C) Apiaceae D) Brassicaceae
29. When two or more authors publish a new species or propose a new name, their names are linked using the epithet?
 A) In B) ex C) et D) emend
30. Binomials with identical genus name and specific epithet are called
 A) Homonym B) Tautonym C) Basionym D) Synonym
31. A document containing a comprehensive account of a specific taxonomic group, generally a genus or family is
 A) Manual B) Flora C) Monograph D) Revision
32. Which among the following is considered a demerit of the 'Engler and Prantl' system of classification?
 A) Gymnosperms are placed between Monocotyledons and Dicotyledons
 B) Gymnosperms are placed among Dicotyledons
 C) Dicotyledons are placed before Monocotyledons
 D) Dicotyledons are placed after Monocotyledons

33. The principles of Numerical taxonomy were developed by
 A) Bentham and Hooker B) Engler and Prantl
 C) Sneath and Sokal D) Takhtajan and Cronquist
34. The botanical name for 'All spice' is
 A) *Pimenta dioica* B) *Amaranthus cruentus*
 C) *Aloe vera* D) *Brassica campestris*
35. What is the botanical name of 'Jute'?
 A) *Dalbergia sissoo* B) *Lagerstroemia speciosa*
 C) *Cedrus deodara* D) *Corchorus capsularis*
36. The rubber obtained from *Manihot glaziovii* is called
 A) Para rubber B) Panama rubber
 C) Ceara rubber D) India rubber
37. Endosperm formation is suppressed in
 A) Orchidaceae B) Compositae
 C) Aristolochiaceae D) Boraginaceae
38. The major alkaloid in Hemlock, which was used for the execution of Socrates, is
 A) Sinigrin B) Strychnin
 C) Coniine D) Quinine
39. The term 'ethnobotany' was introduced by
 A) Powers B) Harshberger
 C) Gilmour D) Martin
40. Ethnobotanical records are stored in -----database
 A) PLANIMAL B) SEPASAL
 C) NAPRALERT D) EMBL
41. The total botanical knowledge held by any non-industrial community and which incorporates all utilitarian, ecological and cognitive aspects of both plant use and vegetation management is called
 A) ITK , Indigenous Technical Knowledge
 B) IAK, Indigenous Agricultural Knowledge
 C) TBK, Traditional Botanical Knowledge
 D) TEK, Traditional Ecological Knowledge
42. Which of the following scientists is credited with the invention of the electron microscope and awarded the Nobel Prize for the same?
 A) J.J. Thompson B) Louise de Broglie
 C) Otto van Borris D) Ernst Ruska

43. Why are thin sections of specimens necessary in Transmission Electron Microscope?
A) Electrons are negatively charged
B) Electrons have a wave nature
C) Electrons have no mass
D) Electrons have a poor penetrating power
44. A linear monomer of D-galactose and 3,6 anhydro-L-galactopyranose is called
A) Dextran
B) Agarose
C) Acrylamide
D) Silica
45. Chromatography that involves the separation of isomers
A) Counter current chromatography
B) Chiral chromatography
C) Paper chromatography
D) Thin layer chromatography
46. The total volume of material, both solid and liquid in the column is known as
A) Void volume
B) Bed volume
C) Elution volume
D) Retention volume
47. Silica gel-G is used in
A) Thin layer chromatography
B) Column chromatography
C) HPLC
D) GLC
48. Labyrinthine cell wall enveloped by plasma membrane is characteristic of
A) Sieve tubes
B) Lenticels
C) Transfer cells
D) Guard cells
49. Ridged and furrowed xylem cylinder with phloem wedges is characteristic of secondary growth in the stem of
A) *Bignonia*
B) *Serjania*
C) *Dracaena*
D) *Boerhaavia*
50. Nanometer is 1/1000th of a
A) Millimeter
B) Centimeter
C) Micrometer
D) Picometer
51. Heavily cutinized leaves that show resistance to desiccation under conditions of extreme drought
A) Microsporophylls
B) Megasporophylls
C) Sclerophylls
D) Podophylls

52. -----is an azodye
 A) Safranin B) Haematoxylin
 C) Aniline blue D) Orange G
53. Carnoy's solution is a mixture of
 A) Aqueous chromic acid, Aqueous acetic acid and distilled water
 B) Ethyl alcohol, Glacial acetic acid and commercial formalin
 C) Ethanol, Glacial acetic acid and Chloroform
 D) Aqueous alcohol, Aqueous acetic acid and distilled water
54. Inactive precursors of certain proteolytic enzymes
 A) Abzymes B) Allozymes
 C) Isozymes D) Zymogens
55. Vincristine and vinblastine are
 A) Phenolics B) Terpenoids
 C) Alkaloids D) Saponins
56. In aqueous solution glucose exists as a
 A) Furanose B) Pyranose
 C) Pentose D) None of the above
57. In a normal metabolic pathway substance Z is produced from X through the intermediate Y and involvement of two enzymes, A and B respectively. If both enzymes are functional, what would be the most possible consequence?
 A) Substance Z accumulates B) Substance X accumulates
 C) Enzyme A accumulates D) Enzyme B accumulates
58. A group of red or yellow compounds found only in the plants of order Caryophyllales
 A) Anthocyanins B) Xanthophylls
 C) Betacyanins D) Betalains
59. Amino acid which accumulates as a result of stress
 A) Proline B) Cysteine
 C) Methionine D) Histidine
60. The biochemical pathway from phosphoenol pyruvic acid to tyrosine is commonly called
 A) Hatch and Slack pathway B) Glycolate pathway
 C) Shikimic acid pathway D) EMP pathway
61. A plant capable of utilizing saline ground water
 A) Hylophyte B) Hyloedad
 C) Halophreatophyte D) Hemerophyte

62. Organelles involved in photorespiration are
 A) Mitochondria, chloroplasts and ribosomes
 B) Mitochondria, chloroplasts and peroxisomes
 C) Mitochondria, nucleus and ribosomes
 D) Mitochondria, peroxisomes and glyoxisomes
63. A system of growing plants with their roots supplied with moisture in the air
 A) Hydroponics
 B) Aeroponics
 C) Bionomics
 D) Geonomics
64. Deficiency of which of these leads to interveinal chlorosis
 A) Magnesium
 B) Calcium
 C) Cobalt
 D) Nitrogen
65. Little leaf disease is due to the deficiency of
 A) Nitrogen
 B) Sodium
 C) Zinc
 D) Manganese
66. Phytochrome is a -----chromoprotein
 A) Red/Orange
 B) Blue/Yellow-green
 C) Purple/Black
 D) Brown/Yellow
67. Small particles present on the inner mitochondrial membrane are called
 A) Ergosomes
 B) Peroxisomes
 C) Elementary particles
 D) Core particles
68. Branch of soil science which deals with the survey, genesis and classification of soils for land use-planning
 A) Serology
 B) Rheology
 C) Pedology
 D) Kymatology
69. Forests that occur in eastern and western Himalayas and in the Nilgiri hills at an altitude of 1,600 – 3,500m are
 A) Tropical evergreen or rain forests
 B) Temperate evergreen or Coniferous forests
 C) Tropical deciduous or monsoon forests
 D) Tropical Thorn forests
70. An interspecific interaction in which one species population is inhibited typically by toxins produced by the other which remains unaffected
 A) Amensalism
 B) Mutualism
 C) Altruism
 D) Tropism
71. The physical space occupied by an organism in an eco system is called
 A) Niche
 B) Sere
 C) Deme
 D) Cline

72. The study of an organism in relation to its environment
A) Autecology B) Palynology
C) Pedology D) Gerantology
73. One of the following steps is not involved in cryopreservation
A) Air-drying B) Slow freezing
C) Encapsulation D) Shadow casting
74. Which of the following biomes has the highest biodiversity?
A) Savannas B) Tundra
C) Tropical rain forest D) Temperate grasslands
75. 'Harmful Algal bloom' is the result of accumulation of species of
A) *Lemna* B) *Pistia*
C) *Alexandrium* D) *Volvox*
76. Pick out the mangrove plant from the following list
A) *Solanum surattense* B) *Excoecaria agallocha*
C) *Saccharam spontaneum* D) *Euphorbia tirucalli*
77. Ozone (O₃) is formed mainly in which layer of the atmosphere
A) Troposphere B) Ozone layer
C) Stratosphere D) Ionosphere
78. The 'mutation theory' of organic evolution was put forward by
A) Hugo deVries B) Weismann
C) Darwin D) Lamarck
79. Changing climate may isolate populations on mountain peaks or in remnant lakes or islands. This is called ----- speciation
A) Allopatric B) Sympatric
C) Parapatric D) None of the above
80. The term 'muton' was coined by
A) Barbara McClintock B) Muller
C) Seymour Benzer D) Jacob and Monad
81. The genetic codes for *ochre*, *amber* and *opal* are-----,----- and----- respectively
A) UGA, UAG, UAA B) UAG, UAA, UGA
C) UAG, UGA, UAA D) UAA, UAG, UGA
82. Intron sequences in DNA always begin and end with
A) AG, GT B) GT, AG
C) TG, GA D) GA, TG

83. Any one of a group of restriction enzymes that recognizes the same nucleotide sequences
 A) Isozyme B) Ribozyme
 C) Isoschizomer D) Isomer
84. The length of the DNA associated with a protein is determined using the technique
 A) DNA replication B) DNA fingerprinting
 C) DNA footprinting D) DNA priming
85. A cell or tissue culture in which single cells or small clumps are grown in an agitated liquid medium
 A) Slop culture B) Suspension culture
 C) Retroculture D) Sericulture
86. About 75% of all white North Americans can taste the chemical phenylthiocarbamide and the remainder cannot. The ability to taste is governed by dominant allele 'T' and inability to taste by the allele 't'. (The population is in Hardy-Weinberg equilibrium). Then the genotypic frequencies are
 A) TT=0.5, Tt = 0.3, tt= 0.2 B) TT=0.25, Tt = 0.5, tt= 0.25
 C) TT=0.5, Tt = 0.2, tt= 0.3 D) TT=0.3, Tt = 0.5, tt= 0.3
87. *Avena abyssinica* is a tetraploid with 28 chromosomes. The cultivated oats (*A. sativa*) appears to be a hexaploid in the same series with the chromosome number:
 A) 168 B) 84
 C) 42 D) 56
88. A normal chromosome with the gene sequence ABCD o EFGH (Small 'o' represents centromere).The chromosomal mutation represented by the gene sequence ABCFE o DGH is
 A) Pericentric inversion B) Paracentric inversion
 C) Reciprocal translocation D) Non-reciprocal translocation
89. Philadelphia chromosome seen in many leukemia patients is the result of reciprocal translocation between chromosomes:
 A) 9 and 22 B) 2 and 9
 C) 2 and 13 D) 9 and 13
90. Dietary restrictions can essentially eliminate the severe mental retardation that is associated with this disorder
 A) Phenylketonuria B) Familial hypercholesterolemia
 C) Tay-Sachs disease D) Haemophilia
91. The genetic abnormality produced by XXY condition in humans is
 A) Down's syndrome B) Kline felter's syndrome
 C) Turner's syndrome D) Lesch-Nyhan disease

92. The *sry* gene is located on the
 A) X-chromosome B) Y-chromosome
 C) Autosome D) Nucleosome
93. Chiasma is a greek word meaning
 A) Cross B) Ring
 C) Chain D) Straight line
94. In sweet peas the genes for flower colour and pollen length were studied. The double heterozygote showed a preponderance of the parental combinations. This could be due to
 A) Independant assortment B) Linkage
 C) Crossing over D) Incomplete Dominance
95. RNA polymerase binds to genes at the
 A) Operator B) Enhancer
 C) Promoter D) Inducer
96. The enzyme reverse transcriptase is an
 A) RNA directed DNA polymerase
 B) RNA directed RNA polymerase
 C) DNA directed DNA polymerase
 D) DNA directed RNA polymerase
97. Puffs or balbiani rings in salivary gland chromosomes are sites of
 A) DNA replication B) RNA synthesis
 C) DNA duplication D) Protein synthesis
98. Chromosome theory of inheritance was proposed by
 A) Watson and Crick B) Jacob and Monad
 C) Beadle and Tatum D) Sutton and Boveri
99. Deposition of material between the microfibrils of the cell wall is called
 A) Intersusception B) Intussusception
 C) Interference D) Integration
100. The first man-made cereal 'Triticale' has been developed from a cross between
 A) Wheat and Oat B) Wheat and Maize
 C) Maize and Rice D) Wheat and Rye
101. Which is the hexaploid species of Wheat?
 A) Triticum monococcum B) Triticum durum
 C) Triticum aestivum D) Triticum turgidum
102. A 'trisomic' individual has
 A) An extra chromosome B) One less chromosome
 C) Two extra chromosomes D) One pair of extra chromosome

103. Kappa particles are present in
 A) Plastids B) Plasmids
 C) Mitochondria D) Cytoplasm
104. Phage ØX-174 has
 A) Double stranded DNA B) Double stranded RNA
 C) Single stranded RNA D) Single stranded DNA
105. The first codon discovered by Nirenberg Mathaei was
 A) GGG B) CCC
 C) UUU D) AAA
106. Khorana first deciphered the triplet codon of
 A) Serine and isoleucine B) Cysteine and valine
 C) Tyrosine and tryptohan D) Phenylalanine and methionine
107. RNA polymerase III makes
 A) rRNA B) hnRNA
 C) tRNA, 5SrRNA D) sn RNA
108. The headquarters of the National Horticulture Board is situated at
 A) New Delhi B) Thiruvananthapuram
 C) Gurgaon D) Bhopal
109. An evolutionary event in which a significant percentage of a population or species is killed or otherwise prevented from reproducing
 A) Bottle-neck B) Genetic load
 C) Founder effect D) Segregational load
110. The equilibrium attained between the electric potential and concentration gradient in a closed system with two compartments separated by a semi-permeable membrane
 A) Hardy-Weinberg equilibrium
 B) Donnan equilibrium
 C) Maxwell-Boltzmann equilibrium
 D) Michaelis-Menten equilibrium
111. Dispersion force or London force is a type of force
 A) Van der Waals B) Hydrophobic-hydrophilic
 C) Ionic D) Covalent
112. The particle associated with bioluminescence
 A) Photon B) Electron
 C) Scintillon D) Phytotron

113. The average fleece weight in a large band of sheep together with its standard deviation was calculated to be 10.3 ± 1.5 lb. The statistics for fleece grade was 5.1 ± 0.7 . Which trait is relatively more variable?
- A) Fleece weight B) Fleece grade
C) Both traits D) None of the traits
114. A common digital sound file existing in personal computers is known as
- A) JPEG file B) ZIP file
C) WAV file D) BMP file
115. A translator that converts a programme written in assembly level language into a machine level language
- A) Compiler B) Assembler
C) Algorithm D) Interpreter
116. The largest order among the Gymnosperms
- A) Cycadales B) Coniferales
C) Ginkgoales D) Gnetales
117. In eukaryotes ATP-Synthase enzyme involved in respiration is in the
- A) Cytoplasm B) Mitochondrial matrix
C) Oxysomes D) Quantasomes
118. One of the following sterols is less prevalent in plants
- A) Campesterol B) Sitosterol
C) Stigmasterol D) Cholesterol
119. Oxidative phosphorylation is a process that
- A) Occurs during respiration
B) Occurs during photosynthesis
C) Occurs in the thylakoid membrane
D) Involves PS I and PS II
120. BLAST programme is used in
- A) DNA sequencing B) Amino acid sequencing
C) DNA bar coding D) Bioinformatics
