

## BOTANY

- Sexual reproduction is absent in
  - Chlorophyceae
  - Rhodophyceae
  - Phaeophyceae
  - Myxophyceae
- ..... are called amphibians of plant kingdom
  - Fungi
  - Bryophytes
  - Pteridophytes
  - Algae
- Pteridophytes differ from Bryophytes in having
  - Archegonia
  - Mineral conducting system
  - Vascular tissue
  - Sex organs
- Sexual system of classification was proposed by
  - Linnaeus
  - De Candolle
  - Aristotle
  - Thorne
- Errors in chromosome segregation lead to
  - Mutation
  - Chromosomal aberration
  - Aneuploidy
  - Linkage
- The ability of cells to take up DNA fragments from the surroundings is known as
  - HFR
  - Competence
  - Fecundity
  - Fidelity
- The dominant generation in bryophytes is

- (A) Sporophytic
  - (B) Saprophytic
  - (C) Gametophytic
  - (D) Parasitic
8. The best defined function of  $Mn^{2+}$  in green plants is
- (A) Nitrogen fixation
  - (B) Photolysis of water
  - (C) Calvin cycle
  - (D) Water absorption
9. Select the **incorrect** statement in relation to lichens
- (A) Lichens are indicators of pollution
  - (B) Some species are eaten by reindeers
  - (C) They grow rapidly *ca.* 2 cm everyday
  - (D) Lichens are symbiotic association between algae and fungi
10. Specific proteins responsible for flow of ions and biomolecules into the cell are called
- (A) Membrane bound receptors
  - (B) Carrier proteins
  - (C) Intrinsic proteins
  - (D) Extrinsic proteins
11. Who discovered Viruses?
- (A) John Ellerman
  - (B) Alexopolous
  - (C) Dmitri Ivanovsky
  - (D) Lamarck
12. Which crop is affected by brown rust disease?
- (A) Sugarcane
  - (B) Potato
  - (C) Sorghum
  - (D) Wheat

13. .... is an example for rootless fern
- (A) *Selaginella*
  - (B) *Salvinia*
  - (C) *Equisetum*
  - (D) *Polysiphonia*
14. The system of classification in which Gymnosperms are placed between Dicotyledons and Monocotyledons is that of
- (A) Carl Linnaeus
  - (B) Takhtajan
  - (C) Bentham and Hooker
  - (D) Alexopolous
15. A binomial in which the specific epithet is a repetition of the generic name is termed as
- (A) Tautonym
  - (B) Synonym
  - (C) Basionym
  - (D) Pseudonym
16. The wood that grows in the winter due to inactive cambium is called as
- (A) Early wood
  - (B) Heart wood
  - (C) Sapwood
  - (D) Autumn wood
17. Flowers which do not open at all and therefore exhibit autogamy or self-pollination are termed as
- (A) Unisexual
  - (B) Cleistogamous
  - (C) Herkogamous
  - (D) Dichogamous
18. Which pigment is involved in the conversion of light energy into chemical energy?
- (A) Chlorophyll a
  - (B) Xanthophyll
  - (C) Carotenoids
  - (D) Chlorophyll b

19. The condition where the carpels are free is
- (A) Syncarpus
  - (B) Apocarpus
  - (C) Adnation
  - (D) Gynobasic
20. Which one among the following statements is correct regarding auxin?
- (A) Auxin is responsible for apical dominance
  - (B) Auxin promotes flowering in litchi and pineapple
  - (C) Auxin regulates senescence
  - (D) IAA is a synthetic auxin
21. Which of the following is an example for incomplete dominance?
- (A) Flower colour in Garden pea
  - (B) Flower colour in Snapdragon
  - (C) Eye colour in *Drosophila*
  - (D) Coat colour in Mice
22. Frederick Griffith discovered
- (A) DNA as the genetic material
  - (B) RNA as the genetic material
  - (C) *Streptococcus* has two strains
  - (D) Bacterial transformation
23. Which one among the following is a parasitic alga?
- (A) *Cephaleuros*
  - (B) *Chlorella*
  - (C) *Prototheca*
  - (D) *Chondrus*
24. Protein bodies are present in
- (A) Embryo
  - (B) Endosperm
  - (C) Suspensor
  - (D) Hypocotyl

25. The protein shell of a virus, enclosing its genetic material (either DNA or RNA) is called
- (A) Cuticle
  - (B) Fimbriae
  - (C) Capsid
  - (D) Pili
26. Masses of bacteria associated with fungal filaments to form a mesh-like structure during sewage treatment are called
- (A) Primary sludge
  - (B) Anaerobic sludge
  - (C) Activated sludge
  - (D) Floccs
27. Rhizophore is commonly found in
- (A) *Sargassum*
  - (B) *Selaginella*
  - (C) *Polytrichum*
  - (D) *Ophioglossum*
28. A specimen cited in the protologue that is neither the holotype nor an isotype is
- (A) Syntype
  - (B) Paratype
  - (C) Lectotype
  - (D) Neotype
29. A cluster of taxa derived from a single common ancestor is
- (A) Deme
  - (B) Histome
  - (C) Clade
  - (D) Ecad
30. Quiescent cell theory was proposed by Claws (1961) in
- (A) Maize
  - (B) Wheat
  - (C) Rice
  - (D) Peanuts

31. Which is sensitive to longer wavelengths of light?
- (A) Photolysis
  - (B) Photophosphorylation
  - (C) PS-II
  - (D) PS-I
32. Which one among the following statements is **not** true?
- (A) Parthenocarpy involves double fertilization
  - (B) Parthenocarpy escapes fertilization
  - (C) Auxins are effective in producing parthenocarpic fruits
  - (D) Parthenocarpic fruits are seedless
33. In double-stranded DNA, the two strands are held together by
- (A) Phosphodiester bonds
  - (B) Covalent bonds
  - (C) Hydrogen bonds
  - (D) Osmotic pressure
34. The model that is now known to be correct for the elucidation of the structure of biomembrane is
- (A) Singer and Nicolson's fluid mosaic model
  - (B) Page's model
  - (C) Lac Operon model
  - (D) Lock and Key model
35. Which of the following comprises only abiotic environmental factors?
- (A) Food, temperature, fire and wind
  - (B) Wind, temperature, soil, minerals and light
  - (C) Food, parasites, predators and competitors
  - (D) Soil, minerals, oxygen level, light and predators
36. Cap cells are found in
- (A) *Nostoc*
  - (B) *Oedogonium*
  - (C) *Chlamydomonas*
  - (D) *Ectocarpus*

37. Pathogen for rice blast disease is
- (A) *Malus domestica*
  - (B) *Oryza sativa*
  - (C) *Magnaporthe oryzae*
  - (D) *Xanthomonas oryzae*
38. The spike like projections on the viral capsid are known as
- (A) Viroid
  - (B) Proteomere
  - (C) Peplomers
  - (D) Capsomeres
39. The gradual replacement of one type of plant community by another is referred as
- (A) Plant Succession
  - (B) Species diversity
  - (C) Phenology
  - (D) Ecological amplitude of a species
40. The antherozoids of *Funaria* are
- (A) Uniflagellate
  - (B) Biflagellate
  - (C) Multiflagellate
  - (D) Having no flagella
41. Kelp is obtained from
- (A) Marine algae
  - (B) Lichens
  - (C) Bryophytes
  - (D) Psilotales
42. .... is an ephemeral structure found at the radicular end of the proembryo
- (A) Endosperm
  - (B) Suspensor
  - (C) Epiblast
  - (D) Scutellum

43. Which of the following is essential for nitrogen fixation?
- (A) Anthocyanins
  - (B) Flavonols
  - (C) Cell membrane
  - (D) Leghaemoglobin
44. Which protein can reverse central dogma?
- (A) Ribosome
  - (B) RNA Polymerase
  - (C) Reverse transcriptase
  - (D) Restriction endonuclease
45. What is the sequence of structural genes in Lac Operon?
- (A) lac-A-lac-Z-lac-Y
  - (B) lac-Z-lac-A-lac-Y
  - (C) lac-Z-lac-Y-lac-A
  - (D) lac-A-lac-Y-lac-Z
46. Pyrenoids in green algal cells are located in
- (A) Cytoplasm
  - (B) Flagella
  - (C) Chloroplast
  - (D) Vacuole
47. A fully assembled infectious form of a virus is called a
- (A) Virion
  - (B) Capsid
  - (C) Viroid
  - (D) Virusoid
48. The most important characteristic feature of bryophytes is
- (A) A dominant and parasitic sporophyte
  - (B) A dominant and spore-producing gametophyte
  - (C) Sporophytes stay for a longer duration
  - (D) A small sporophyte phase, which is dependent on the gametophyte



49. The outermost proteinaceous layer of the maize endosperm is
- (A) Aleurone
  - (B) Endodermis
  - (C) Endothecium
  - (D) Pericarp
50. Name the cellular location where pentose phosphate pathway occurs?
- (A) Cell membrane
  - (B) Cytosol
  - (C) Ribosomes
  - (D) Mitochondria
51. Which of the following occurs in meiosis, but not in mitosis?
- (A) Attachment of spindle fibres to kinetochore
  - (B) Replication of DNA prior to the start of cell division
  - (C) Pairing of homologous chromosomes
  - (D) Separation of sister chromatids at anaphase
52. Leaf blight of apple is caused by
- (A) *Alternaria* sps.
  - (B) *E. coli*
  - (C) *Pseudomonas* sps.
  - (D) *Xanthomonas citri*
53. In Mosses, the spore grows into a short tube which lengthens and ultimately forms a much branched filament like structure known as
- (A) Sporophyte
  - (B) Elaters
  - (C) Calyptra
  - (D) Protonema
54. *Rhynia* was found during
- (A) Carboniferous
  - (B) Permian
  - (C) Devonian
  - (D) Silurian

55. 'Saccus' is the term used for
- (A) Winged pollen grains of *Pinus*
  - (B) Wings of *Pinus* seeds
  - (C) Exine of pollen grains of *Pinus*
  - (D) Intine of pollen grains of *Pinus*
56. Flower is a modification of
- (A) shoot
  - (B) fruit
  - (C) root
  - (D) bud
57. Part of the pro-meristem that develops into the cortex of stem and root is termed as
- (A) Dermatogen
  - (B) Periblem
  - (C) Plerome
  - (D) Both dermatogen and plerome
58. During photorespiration, glycolate is oxidized to glyoxylate in
- (A) Peroxisomes
  - (B) Nucleus
  - (C) Endoplasmic reticulum
  - (D) Ribosome
59. Mendel discovered factors which retain their identity in a hybrid. These factors are now termed as
- (A) DNA
  - (B) Alleles
  - (C) Genes
  - (D) Chromosomes
60. Fungi imperfecti is a group of fungal species which have
- (A) Simple mycelia
  - (B) Unknown phylogenetic relationship
  - (C) Unknown mechanism of sexual reproduction
  - (D) Lost its survival mechanism against harsh environment

61. A special ring-like layer of epidermal cells, lying around the capsule of Mosses is
- (A) Operculum
  - (B) Annulus
  - (C) Spore-sac
  - (D) Apophysis
62. Which among the following is not a phytohormone?
- (A) Auxin
  - (B) Gibberelins
  - (C) Ethylene
  - (D) Polyamines
63. An example for monosporic, monopolar, four celled and four nuclear embryo sac is
- (A) *Oenothera*
  - (B) *Allium*
  - (C) *Polygonum*
  - (D) *Endymion*
64. .... is commonly called as club moss
- (A) *Selaginella*
  - (B) *Lycopodium*
  - (C) *Equisetum*
  - (D) *Ophioglossum*
65. Coconut milk is a rich source of
- (A) Auxins
  - (B) Gibberlins
  - (C) Abscisic acid
  - (D) Cytokinins
66. Choose the correct sequence
- (A) Kingdom-Division-Class-Order-Family-Genus-Species
  - (B) Order-Family-Class-Division-Genus-Species
  - (C) Kingdom-Class-Division-Family- Order-Genus-Species
  - (D) Class-Family-Order-Division-Kingdom-Genus-Species

67. The document that includes all the information related to a particular genus or plant family is termed as
- (A) Record
  - (B) Monograph
  - (C) Revision
  - (D) Plant module
68. Vernalization is the effect of ..... on the flowering response of a plant
- (A) Water
  - (B) Chilling
  - (C) Chemicals
  - (D) Light
69. Phytochrome is a
- (A) Flavoprotein
  - (B) Glycoprotein
  - (C) Chromoprotein
  - (D) Lipoprotein
70. In Bryophytes, the simplest or the most primitive type of sporophyte occurs in
- (A) *Funaria*
  - (B) *Marchantia*
  - (C) *Riccia*
  - (D) *Anthoceros*
71. In plants, the second sperm cell fuses with a two nucleated somatic cell to produce the
- (A) Haploid endosperm
  - (B) Triploid endosperm
  - (C) Diploid endosperm
  - (D) Haploid microspore
72. Which State has the highest percentage of mangrove cover in India?
- (A) Gujarat
  - (B) Tamil Nadu
  - (C) Andaman and Nicobar
  - (D) West Bengal

73. The development of specialized cell types is called
- (A) Differentiation
  - (B) Dedifferentiation
  - (C) Senescence
  - (D) Morphogenesis
74. 'Origin of species' was written by
- (A) Oparin
  - (B) Weismann
  - (C) Darwin
  - (D) Lamarck
75. Which one of the following is not a function of auxin?
- (A) Induction of callus
  - (B) Inducing dormancy
  - (C) Enhancing cell division and elongation
  - (D) Maintaining apical dominance
76. Which among the following is called two tailed virus?
- (A) *Myoviridae*
  - (B) *Escherichia*
  - (C) *Podoviridae*
  - (D) *Acidianus*
77. The whole of tobacco mosaic virus (TMV) genome consists of ..... nucleotides.
- (A) 4600
  - (B) 6400
  - (C) 4400
  - (D) 5400
78. ....enzyme is used to release mature virions from the host cell.
- (A) Haemagglutinin
  - (B) Vacciniase
  - (C) Neuraminidase
  - (D) Endopeptidase

79. A closed ascocarp is named as
- (A) Perithecium
  - (B) Apothecium
  - (C) Cleistothecium
  - (D) Hypothecium
80. Separate structures bearing sterigmata on which basidiospores are produced, are known as
- (A) Holobasidia
  - (B) Phragmobasidia
  - (C) Basidiocarps
  - (D) Ascocarps
81. Chitin is a linear polymer of  $\beta$  N-acetyl glucosamine units, linked by
- (A)  $\beta$  1-4 glycosidic bonds
  - (B)  $\beta$  1-3 linked glucose residues
  - (C)  $\beta$  1-3 glycosidic bonds
  - (D)  $\beta$  1-4 linked glucose bonds
82. ....is an unbranched, filamentous form that grows attached to the substratum when young, but often becomes free-floating at maturity.
- (A) *Oedogonium*
  - (B) *Bulbochaete*
  - (C) *Coleochaete*
  - (D) *Oedocladium*
83. Which among the following algae has a ribbon-shaped chloroplast?
- (A) *Chlamydomonas*
  - (B) *Ectocarpus*
  - (C) *Batrachospermum*
  - (D) *Cystoseira*
84. Which one among the following is found in deserts?
- (A) *Hyella*
  - (B) *Chlorella*
  - (C) *Nostoc*
  - (D) *Trebouxia*

85. Which one of the following is used as an ecological indicator in standard algal assay tests, for freshwater systems?
- (A) *Cladophora*
  - (B) *Selenastrum*
  - (C) *Cladostephus*
  - (D) *Cystoseira*
86. Select the alga which is used as a Seaweed Fertilizer.
- (A) *Gelidium*
  - (B) *Gracilaria*
  - (C) *Dictyopteris*
  - (D) *Kappaphycus*
87. Father of Indian Bryology is
- (A) S.K.Pande
  - (B) R.S.Chopra
  - (C) S.R.Kashyap
  - (D) Ram Udar
88. The life cycle operative in members of Bryophytes is
- (A) Haplontic
  - (B) Diplontic
  - (C) Haplo-diplontic
  - (D) Diplo-biontic
89. Pseudoelators are found in
- (A) Hepaticopsida
  - (B) Anthocerotopsida
  - (C) Bryopsida
  - (D) Mosses
90. The bryophytes growing on tree bark are called as
- (A) Terricolous
  - (B) Lignicolous
  - (C) Saxicolous
  - (D) Corticolous

91. Peat moss is the common name of
- (A) *Marchantia*
  - (B) *Funaria*
  - (C) *Sphagnum*
  - (D) *Anthoceros*
92. The production of diploid gametophyte from the vegetative cells of sporophyte without the production of spores is known as
- (A) Apogamy
  - (B) Apospory
  - (C) Apomixis
  - (D) Heterospory
93. Which group is known for the independence of gametophyte and sporophyte generations?
- (A) Mosses, hornworts, and liverworts
  - (B) Ferns
  - (C) Charophytes
  - (D) Gymnosperms
94. Horsetail is the common name of
- (A) *Lycopodium*
  - (B) *Selaginella*
  - (C) *Equisetum*
  - (D) *Marsilea*
95. Which one among the following pteridophytes is used as a biofertilizer?
- (A) *Selaginella*
  - (B) *Pteris*
  - (C) *Azolla*
  - (D) *Dryopteris*
96. The stele present in aerial stem of *Equisetum* is
- (A) Plectostele
  - (B) Siphonostele
  - (C) Solanostele
  - (D) Protostele



97. In ferns, the thin brownish chaffy scales covering the growing points of rhizome are called
- (A) Tassels
  - (B) Ramenta
  - (C) Harmogone
  - (D) Flagella
98. Which one of the following is not a Cryptogam?
- (A) Algae
  - (B) Bryophyta
  - (C) Pteridophyta
  - (D) Gymnosperms
99. Which one among the following is found in gymnosperms?
- (A) Triploid endosperm
  - (B) No fertile flower parts
  - (C) Pollen
  - (D) Carpels
100. Gymnosperms were dominant in ..... era.
- (A) Precambrian
  - (B) Paleozoic
  - (C) Mesozoic
  - (D) Coenozoic
101. Gymnosperms do not have
- (A) Trees
  - (B) Shrubs
  - (C) Herbs
  - (D) Lianas
102. A phenetic grouping is depicted as a branching diagram known as a
- (A) Cladogram
  - (B) Phylogram
  - (C) Phenogram
  - (D) Parsimony

103. The sexual system of plant classification formulated by Linnaeus divided the flora into 24 classes mainly based on
- (A) Calyx
  - (B) Stamens
  - (C) Corolla
  - (D) Gynoecium
104. In Bentham –Hooker’s classification, the significant character of subclass Polypetalae is
- (A) United petals
  - (B) Free petals
  - (C) Absence of petals
  - (D) Presence of perianth
105. Which family of flowering plants is represented by the largest number of species in India?
- (A) Orchidaceae
  - (B) Poaceae
  - (C) Rubiaceae
  - (D) Asteraceae
106. A Numerical taxonomy protocol which gives equal weightage to all the characters in the preliminary analysis, identify those characters which show the least homoplasy and give them more weightage in the subsequent analysis is known as
- (A) Correlated
  - (B) Divergence
  - (C) Successive weighting
  - (D) Character weighting
107. All of the specimen in the collections have a unique number in the permanent herbarium that is assigned to each specimen individually. These numbers are referred to as
- (A) Field Number
  - (B) Accession number
  - (C) Collection Number
  - (D) Folder Number
108. The first modern botanical garden was created by Luca Ghini (1544), and it is known as
- (A) Pisa Botanical Garden
  - (B) Missouri Botanical Garden
  - (C) Padua Botanical Garden

- (D) Kew Botanical Garden
109. Who used the word "herbarium" in its original sense for the first time?
- (A) John Ray
  - (B) Carl Linnaeus
  - (C) Joseph Pitton de Tournefort
  - (D) Theophrastus
110. A specimen obtained from the same location as that of the holotype's original collection, is referred to as a
- (A) Neotype
  - (B) Lectotype
  - (C) Topotype
  - (D) Epitype
111. A principle which prioritizes preserving the names of well-known families or genera that has been developed and published in the code, is known as
- (A) *Nomina rejicienda*
  - (B) *Nomina conservanda*
  - (C) Typification
  - (D) Priority of Publication
112. Which family was classified based on the bimodal karyotype chromosome variations?
- (A) Agavaceae
  - (B) Amarillidaceae
  - (C) Cyperaceae
  - (D) Poaceae
113. A dichotomous key consists of a sequence of two contrasting statements, each statement is known as a
- (A) Couplet
  - (B) Lead
  - (C) Indented
  - (D) Bracketed
114. Who is the author of *Flora Indica*?
- (A) J.D. Hooker
  - (B) Duthie
  - (C) William Roxburgh

- (D) J.S.Gamble
115. Who coined the term protoplast to designate the unit of protoplasm inside the cell wall?
- (A) Johannes Hanstein
  - (B) Robert Brown
  - (C) Hugo von Mohl
  - (D) Albert von Kolliker
116. Meristematic cells that grow by divisions in all planes and produce bodies that are isodiametric with no definite shape are called
- (A) Plate meristem
  - (B) Rib meristem
  - (C) Mass meristem
  - (D) Primary meristem
117. Which one is referred to as the succession of changes in form, structure and function of progenies of meristematic derivatives and their organization into tissues and organs?
- (A) Differentiation
  - (B) Dedifferentiation
  - (C) Redifferentiation
  - (D) Transdifferentiation
118. A condition that arises from a DNA replication cycle within the nuclear envelope and without spindle formation is known as
- (A) Duplication
  - (B) Endoduplication
  - (C) Polyploidy
  - (D) Endopolyploidy
119. Histogen theory is related to structural organization of shoot apices and embryos of angiosperms. This concept was proposed by
- (A) A. Schmidt
  - (B) Julian von Sachs
  - (C) Gottlieb Haberlandt
  - (D) Hanstein

120. The part of the wood in a living tree that contains living cells and reserve materials is
- (A) Sap wood
  - (B) Heart wood
  - (C) Soft wood
  - (D) Fibrous wood
121. If the diploid number of a flowering plant is 18, what would be the chromosome number in its endosperm?
- (A) 54
  - (B) 36
  - (C) 18
  - (D) 27
122. Which ovary type is characterized by having the hypanthium fusing with a portion of the ovary?
- (A) Inferior ovary
  - (B) Superior ovary
  - (C) Half – inferior ovary
  - (D) Half – superior ovary
123. Which of the following structures is known to be involved in directing the growth of pollen tube towards the embryo sac?
- (A) Chalaza
  - (B) Micropyle
  - (C) Filiform apparatus
  - (D) Synergids
124. In a Pine tree, the microspores and megaspores are produced by the process of
- (A) Fertilization
  - (B) Mitosis
  - (C) Fusion
  - (D) Meiosis
125. Asexual reproduction is likely to be the most common in
- (A) Tropical rainforests
  - (B) Deciduous forests
  - (C) Temperate grasslands
  - (D) Arctic tundras

126. Which suspensor cell will become a part of the embryo during embryogenesis?
- (A) Hypophysis
  - (B) Terminal cell
  - (C) Inner integument
  - (D) Nucellus
127. Irregular sexual reproduction causes recombinant genotypes in populations, a phenomenon termed as
- (A) Amphimixis
  - (B) Leaky apomixis
  - (C) Mutation
  - (D) Parthenogenesis
128. The plasma membrane having a dual attraction by way of containing both a lipid-soluble and a water-soluble region in the biomolecule is known as
- (A) ionophoric
  - (B) hydrophobic
  - (C) amphiphilic
  - (D) hydrophilic
129. Integral membrane proteins that form water – selective channels across the plasma membrane are called as
- (A) Chaperones
  - (B) Aquaporins
  - (C)  $\text{Na}^+ - \text{K}^+$  - pump
  - (D) Cellulose microfibrils
130. The deficiency of .....leads to stunted growth of the entire plant and a dark green coloration of the leaves which may be malformed to contain small areas of dead tissue called necrotic spots.
- (A) Zinc
  - (B) Magnesium
  - (C) Phosphorus
  - (D) Calmodulin

131. A transmembrane proton gradient that links energy-releasing processes to energy consuming processes is called
- (A) Antiport
  - (B) Symport
  - (C) Chemiosmosis
  - (D) Reverse osmosis
132. Translocation of carbohydrates occurs mainly as
- (A) Maltose
  - (B) Fructose
  - (C) Glucose
  - (D) Sucrose
133. The ATP and NADPH produced from the light reaction are utilized
- (A) in glycolysis in roots
  - (B) directly in most biochemical reactions of the cell
  - (C) during the reactions of the Calvin cycle to produce glucose
  - (D) to synthesize chlorophyll
134. On regeneration of  $\text{NAD}^+$  from NADH oxidation in glycolysis, which biomolecule is produced in anaerobic respiration by fermentation?
- (A) Ethanol
  - (B) Lactic acid
  - (C) Glycerol
  - (D) Acetic acid
135. Choose the enzyme that catalyses the transfer of pyruvate to lactate
- (A) Hexokinase
  - (B) Phosphofructokinase
  - (C) Pyruvate kinase
  - (D) Lactate dehydrogenase
136. Which hormone increases the plasticity of plant cell wall?
- (A) Auxin
  - (B)  $\text{GA}_3$
  - (C) Cytokinin
  - (D) Brassinosteroids

137. The ..... amino acid accumulation lowers the water potential of the cell, thereby promoting cellular water retention under stress conditions.
- (A) abscisic acid (ABA)
  - (B) LEA proteins
  - (C) proline
  - (D) cytokinin
138. Which one of the following ecosystems is responsible for highest carbon sequestration?
- (A) Marine ecosystem
  - (B) Mangrove forests
  - (C) Tropical forests
  - (D) Tundra
139. Phototropism refers to the plant response to sunlight by bending towards the light. This is due to
- (A) Cell division on the side of the stem closer to the light source
  - (B) Cell division on the side of the stem away from the light source
  - (C) Cell elongation on the side of the stem which is away from the light source
  - (D) Cell differentiation on the side of the stem away from the light source
140. Bateson used *Lathyrus odoratus* to demonstrate ..... gene interaction.
- (A) Complementary
  - (B) Supplementary
  - (C) Codominance
  - (D) Epistasis
141. Which cross is used to determine the genotype of an individual exhibiting a dominant phenotype?
- (A) Back cross
  - (B) Test cross
  - (C) Monohybrid cross
  - (D) Dihybrid cross
142. An inheritance where multiple independent genes have an additive or similar effect on a single quantitative trait is called
- (A) Monogenetic
  - (B) Polygenic
  - (C) Pleiotropy
  - (D) Wild type



143. A male individual has 47 chromosomes with one extra X chromosome (44 autosomes + XXY). This chromosomal feature is termed as
- (A) Down's syndrome
  - (B) Turner's syndrome
  - (C) Klinefelter's syndrome
  - (D) Marfan's syndrome
144. A mechanism that can cause a gene to move from one linkage group to another is
- (A) Crossing over
  - (B) Duplication
  - (C) Inversion
  - (D) Translocation
145. Which of the following organelles is involved in cell wall synthesis in plants?
- (A) Endoplasmic reticulum
  - (B) Dictyosomes
  - (C) Ribosomes
  - (D) Cell membrane
146. In plants, which organelle play an essential role in converting fatty acids stored in germinating seeds into sugars?
- (A) Lysosomes
  - (B) Peroxisomes
  - (C) Glyoxisomes
  - (D) Polysomes
147. Enzymes responsible for transcription in both prokaryotic and eukaryotic cells are
- (A) DNA polymerases
  - (B) Transcriptases
  - (C) RNA-dependent DNA polymerases
  - (D) DNA-dependant RNA polymerases
148. Which of the following is not involved in the post transcriptional processing of tRNA?
- (A) Base modulation
  - (B) Attachment of CCA-arm
  - (C) Splicing
  - (D) Attachment of poly-A tail

149. Which enzymes change the supercoiled state of a DNA molecule by creating a transient break in one strand of the duplex?
- (A) Type I Topoisomerases
  - (B) Type II Topoisomerases
  - (C) DNA Polymerase I
  - (D) DNA Polymerase II
150. Which is the initial step in soil formation?
- (A) Sedimentation
  - (B) Mineralization
  - (C) Humification
  - (D) Weathering

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**Subject Name: 602 BOTANY**

SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key
1	D	31	D	61	B	91	C	121	D
2	B	32	A	62	D	92	B	122	C
3	C	33	C	63	A	93	B	123	C
4	A	34	A	64	B	94	C	124	D
5	C	35	B	65	D	95	C	125	D
6	B	36	B	66	A	96	B	126	A
7	C	37	C	67	B	97	B	127	B
8	B	38	C	68	B	98	D	128	C
9	C	39	A	69	C	99	C	129	B
10	B	40	B	70	C	100	C	130	C
11	C	41	A	71	B	101	C	131	C
12	D	42	B	72	D	102	C	132	D
13	B	43	D	73	A	103	B	133	C
14	C	44	C	74	C	104	B	134	B
15	A	45	C	75	B	105	B	135	D
16	D	46	C	76	D	106	C	136	A
17	B	47	A	77	B	107	B	137	C
18	A	48	D	78	C	108	A	138	A
19	B	49	A	79	C	109	C	139	C
20	A	50	B	80	B	110	C	140	A
21	B	51	C	81	A	111	B	141	B
22	D	52	A	82	A	112	A	142	B
23	A	53	D	83	B	113	B	143	C
24	B	54	C	84	A	114	C	144	D
25	C	55	A	85	B	115	A	145	B
26	D	56	A	86	C	116	C	146	C
27	B	57	B	87	C	117	A	147	D
28	B	58	A	88	C	118	B	148	D
29	C	59	C	89	B	119	D	149	A
30	A	60	C	90	D	120	A	150	D