

D 102511

(Pages : 14)

Name.....

Reg. No.....

P.G. ENTRANCE EXAMINATION, APRIL 2024

BOTANY

Time : Two Hours

Maximum : 400 Marks

Each question carries 4 marks.

1 mark will be deducted for each wrong answer.

1. Which of the following is a genetically modified rice :
 - (a) Basmati rice.
 - (b) Golden rice.
 - (c) Jeerakasala rice.
 - (d) Ponni rice.
2. Plant hormone causing abscission of leaves, and senescence is :
 - (a) IAA.
 - (b) Ethylene.
 - (c) Auxin.
 - (d) ABA.
3. The fossil gymnosperm is :
 - (a) Araucaria.
 - (b) Gnetum.
 - (c) Williamsonia.
 - (d) None of the above.
4. In CAM plants carbon dioxide fixation happens at :
 - (a) Night.
 - (b) Day.
 - (c) Morning.
 - (d) Evening.
5. Which of the following plants are called vascular cryptogams ?
 - (a) Bryophytes.
 - (b) Thallophytes.
 - (c) Pteridophytes.
 - (d) None of the these
6. The father of the Indian Green Revolution is :
 - (a) M. S. Swaminathan.
 - (b) S. K. Jain.
 - (c) Norman Borlaug.
 - (d) K. C. Mehta.

Turn over

7. Main function of lenticel is :
- (a) Transportation.
 - (b) Guttation.
 - (c) Exudation.
 - (d) Gaseous exchange.
8. Double fertilization is found in :
- (a) Bryophytes.
 - (b) Angiosperms.
 - (c) Gymnosperms.
 - (d) Pteridophytes.
9. In which period of the geological time scale did the flowering plants originate ?
- (a) Jurassic.
 - (b) Carboniferous.
 - (c) Cretaceous.
 - (d) None of the above.
10. Which of the following is a phytogeographical zone of India ?
- (a) Bombay.
 - (b) Bangalore.
 - (c) Malabar.
 - (d) None of the above.
11. Which of the following nitrogenous bases is not found in DNA ?
- (a) Adenine.
 - (b) Guanine.
 - (c) Thymine.
 - (d) Uracil.
12. The plasmid that can integrate into the bacterial DNA is called :
- (a) Ribosomes.
 - (b) Episome.
 - (c) Virion.
 - (d) None of the above
13. The external particles that enter the cell are digested by :
- (a) Mitochondria.
 - (b) Peroxisome.
 - (c) Endoplasmic reticulum.
 - (d) Lysosome.
14. Poisson distribution and normal distribution are :
- (a) Non-probability distribution.
 - (b) Probability distribution.
 - (c) Asymmetric distribution.
 - (d) All of the above.

15. Name the algae which is a rich source of protein :

- (a) Spirogyra.
- (b) Chlorella.
- (c) Ulothrix.
- (d) Cladophora.

16. The cell wall of fungi is made up of :

- (a) Cellulose.
- (b) Lipids.
- (c) Proteins.
- (d) Chitin.

17. Find the median of 22, 10, 18, 12, 20 :

- (a) 12.
- (b) 22.
- (c) 18.
- (d) 10.

18. Match the following :

- | | |
|--------------------------|--------------------------|
| i Custard apple | A Myrtaceae. |
| ii Guava | B Annonaceae. |
| iii Jack fruit | C Bromeliaceae. |
| iv Pineapple | D Moraceae. |
| (a) i-A ii-B iii-C iv-D. | (b) i-A ii-C iii-B iv-A. |
| (c) i-B ii-A iii-D iv-C. | (d) i-C ii-D iii-A iv-B. |

19. A reduction in the ascorbic acid contents in a plant is due to the deficiency of :

- (a) Copper.
- (b) Zinc.
- (c) Sulphur.
- (d) Iron.

20. The correlation coefficient's value ranges from :

- (a) -1 to 1.
- (b) 0 to 1.
- (c) -1 to 0.
- (d) None of the above.

21. The sunken stomata are commonly present in :

- (a) Hydrophyte.
- (b) Xerophyte.
- (c) Mesophyte.
- (d) Epiphyte.

22. Which of the following is not a naturally occurring plant hormone ?
- (a) GA₂. (b) 2, 4-D.
(c) IAA. (d) Gibberellin.
23. Chaperonins are :
- (a) Heat shock protein. (b) Cold stress protein.
(c) Anti shocking lipid. (d) None of the above.
24. Which of the following plant is known as 'Arogyapacha' ?
- (a) *Trichopus zeylanicus*. (b) *Trichosanthes cucumerina*.
(c) *Terminalia arjuna*. (d) *Tridax procumbans*.
25. Which of the following is a symbiotic nitrogen fixing bacteria :
- (a) Clostridium. (b) Rhizobium.
(c) Campylobacter. (d) Escherichia.
26. Lichens are excellent bioindicators of ————— pollution.
- (a) NO₂. (b) CO₂.
(c) SO₂. (d) CO.
27. The process of formation of a bare area without any form of life is :
- (a) Climax. (b) Nudation.
(c) Ecesis. (d) Sere.
28. Mycology is the study of :
- (a) Algae. (b) Fungi.
(c) Bacteria. (d) Virus.
29. Which of the following plant is commonly called 'kurunthotti' ?
- (a) *Sida*. (b) *Hibiscus*.
(c) *Rauwolfia*. (d) *Saraca*.

30. Which of the following representations of data is not a graphical representation ?
- (a) Bar diagram.
 - (b) Pie chart.
 - (c) Tabular column.
 - (d) Line graph.
31. The Algal partner in a lichen is called phycobiont and the fungal partner is termed as :
- (a) Mycobiont.
 - (b) Lichobiont.
 - (c) Glycobiont.
 - (d) None of the above.
32. The number of grams of solute equivalents present in given volume of solution is called :
- (a) Molarity.
 - (b) Normality.
 - (c) Molality.
 - (d) Concentration.
33. What is the range of the pH scale ?
- (a) 0 – 10.
 - (b) – 10 – + 10.
 - (c) 0 – 14.
 - (d) 1 – 14.
34. The centrifugation method commonly used to separate cell organelles is :
- (a) Differential centrifugation.
 - (b) Analytical centrifugation.
 - (c) Density gradient centrifugation.
 - (d) Isopycnic centrifugation.
35. Thin Layer Chromatography (TLC) is :
- (a) Ion exchange chromatography.
 - (b) Adsorption chromatography.
 - (c) Size exclusion chromatography.
 - (d) None of the above.
36. Which of the following is not present in prokaryotic cell :
- (a) Plasma membrane.
 - (b) Cell wall.
 - (c) Nuclear membrane.
 - (d) None of the above.

37. The main system board of a computer is called :
- (a) Motherboard. (b) Dashboard.
(c) Processor. (d) RAM.
38. Which of the following computer applications is commonly used to prepare a presentation ?
- (a) Photoshop. (b) Powerpoint.
(c) MS Word. (d) MS Access.
39. The toxins produced by *Aspergillus* are called :
- (a) Aflatoxin. (b) Phytotoxin.
(c) Chemo toxin. (d) None of the above.
40. Quick wilt of pepper is caused by :
- (a) *Phytophthora*. (b) *Fusarium*.
(c) *Pseudomonas*. (d) *Aspergillus*.
41. 'Use and disuse theory' was put forth by :
- (a) Wallace. (b) Darwin.
(c) Lamarck. (d) Hugo de Vries.
42. The genetic drift is caused by :
- (a) Orderly change in gene frequency.
(b) Random change in gene frequency.
(c) Sudden change in phenotype.
(d) None of the above
43. Which of the following is called pearl millet ?
- (a) Ragi. (b) Sorghum.
(c) Jowar. (d) Bajra.
44. The first plant genome to be fully sequenced is :
- (a) *Arabidopsis thaliana*. (b) *Genlisea margaretae*.
(c) *Utricularia gibba*. (d) *Genlisea aurea*.

45. Which of the following is anti-virus software ?
- (a) Linux. (b) Java.
(c) Avast. (d) Python.
46. Which of the following is a stop codon ?
- (a) AUG. (b) UUU.
(c) UAA. (d) CAA.
47. Which of the sequencing methods is also known as chain termination method ?
- (a) Next-generation sequencing.
(b) Sanger sequencing
(c) Shotgun sequencing.
(d) None of the above
48. The timber suitable for making ships :
- (a) Pine wood. (b) Plywood.
(c) Teak wood. (d) Rose wood.
49. Which plant is commonly called sacred fig ?
- (a) *Ficus religiosa*. (b) *Aegle marmelos*.
(c) *Ocimum sanctum*. (d) *Sida acuta*.
50. Which of the following is a major tribe in Kerala ?
- (a) Gujjar. (b) Kani.
(c) Lamba. (d) Gond.
51. Clusters of co-regulated genes with related functions in prokaryotic genome is :
- (a) Transposon. (b) Codon.
(c) Operon. (d) None of the above.
52. The building blocks of proteins are called :
- (a) Amino acids. (b) Lipids.
(c) Carbohydrates. (d) Nucleic acids.

53. Which of the following is due to point mutation ?
- (a) Down's syndrome. (b) Sickle cell anemia.
(c) Cystic fibrosis. (d) None of the above.
54. The ability of plant cell to develop into a complete plant is called :
- (a) Pluripotency. (b) Micropropagation.
(c) Totipotency. (d) Cloning.
55. The fusion of normal protoplast from one parent with the enucleated protoplast of the other parent leads to the production of :
- (a) Cybrid. (b) Hybrid.
(c) Clone. (d) None of the above
56. The live information source for all the genes in the respective plant which could be conserved is :
- (a) Protoplasm. (b) Germplasm.
(c) Endoplasm. (d) Alloplasm.
57. The smallest unit of light energy is :
- (a) Electron. (b) Photon.
(c) Positron. (d) Neutron.
58. Which of the following plant has cymose inflorescence ?
- (a) *Jasminum grandiflorum*. (b) *Amaranthus caudatus*.
(c) *Cassia fistula*. (d) *Azadirachta indica*.
59. Bioremediation with the help of plants is :
- (a) Bioaugmentation. (b) Intrinsic bioremediation.
(c) Phytoremediation. (d) Biostimulation.
60. The technique that helps to identify the genetic makeup of a person or other living thing that could be used in a court of law as evidence :
- (a) DNA fingerprinting. (b) Recombinant DNA technology.
(c) Gene sequencing. (d) Gene cloning.

61. The cross-pollination in plants by insects :
- (a) Ornithophily. (b) Entomophily.
(c) Chiropterophily. (d) Anemophily.
62. Which type of fruits are citrus fruits ?
- (a) Berry. (b) Drupe.
(c) Pome. (d) Hesperidium.
63. Match the following :
- | | |
|---------------------------|-----------------|
| i. Apical meristem | A Cork cambium. |
| ii. Lateral meristem | B Internode. |
| iii. Intercalary Meristem | C Root apex. |
| iv. Secondary meristem | D Cambium. |
- (a) i-C ii-D iii-B iv-A. (b) i-D ii-B iii-A iv-C.
(c) i-A ii-B iii-C iv-D. (d) i-D ii-A iii-B iv-C.
64. Which of the following is absent in most of the monocotyledons ?
- (a) Tracheids. (b) Phloem parenchyma.
(c) Xylem parenchyma. (d) Vessels.
65. Which of the following substance is abundant on the leaf surface of desert plants ?
- (a) Lignin. (b) Pectin.
(c) Cutin. (d) None of these.
66. Which of the following plants possess cyathium type inflorescence ?
- (a) *Euphorbia pulcherima* (b) *Hibiscus hispidissimus*
(c) *Bauhinia acuminata* (d) *Ixora coccinea*
67. Kranz anatomy is found in the leaves of :
- (a) C3 plants. (b) C4 plants.
(c) CAM plants. (d) All of the above.

68. Velamen roots are found in :
(a) Xerophytes. (b) Hydrophytes.
(c) Thallophytes. (d) Epiphytes.
69. Which of the following vegetables belong to the night shade family ?
(a) Tomato. (b) Okra.
(c) Cucumber. (d) Green peas.
70. The plant which possess maximum number of chromosomes is :
(a) *Brassica oleracea*. (b) *Ophioglossum reticulatum*.
(c) *Arabidopsis thaliana*. (d) None of these.
71. The vitamin necessary for wound healing is :
(a) Vitamin A. (b) Vitamin D.
(c) Vitamin C. (d) Vitamin E.
72. The cofactor of DNA polymerase enzyme is :
(a) Fe^{2+} . (b) Mg^{2+} .
(c) Cu^{2+} . (d) Mn^{2+} .
73. The factors influencing the rates of enzyme-catalyzed reactions are described mathematically using :
(a) Michaelis-Menten equation. (b) Beer-Lambert law.
(c) Rate law. (d) Scaling law.
74. Which of the following chemical induce polyploidy in plants ?
(a) Ethylene. (b) Azadirachtin.
(c) Colchicine. (d) None of these.
75. How many subunits are there in eukaryotic succinate dehydrogenase ?
(a) 2. (b) 4.
(c) 6. (d) 5.

76. Which of the following is a natural system of classification ?
- (a) Bentham and Hooker classification.
 - (b) Hutchinson's classification.
 - (c) Engler and Prantl classification.
 - (d) Whittaker system of classification.
77. The technology by which RNA molecules are converted into their complementary DNA (cDNA) sequences :
- (a) Real Time PCR.
 - (b) Reverse transcription PCR.
 - (c) Inverse PCR.
 - (d) Touchdown PCR.
78. The one specimen or illustration used by the author or designated by the author as the nomenclatural type :
- (a) Syntype.
 - (b) Isotype.
 - (c) Lectotype.
 - (d) Holotype.
79. Which of the following is a transgenic plant ?
- (a) Pomato.
 - (b) Meyer lemon.
 - (c) Bt cotton.
 - (d) All of the above.
80. Which of the following is both nutritious and medicinal single cell protein ?
- (a) Spirulina.
 - (b) Volvox.
 - (c) Nostoc.
 - (d) None of these.
81. Which of the following is the smallest free living and self-replicating organism :
- (a) Bacteria.
 - (b) Mycoplasma.
 - (c) Chlorella.
 - (d) Diatom.
82. Cell in the body of a human with 92 chromosomes will be termed :
- (a) Diploid.
 - (b) Tetraploid.
 - (c) Triploid.
 - (d) Polyploid.

83. Which of the following elements is NOT a micronutrient in plants ?
- (a) Phosphorus.
 - (b) Iron.
 - (c) Copper.
 - (d) Zinc.
84. Part of gynoecium which receives the pollen is :
- (a) Ovary.
 - (b) Ovule.
 - (c) Stigma.
 - (d) Style.
85. The enzyme which attaches amino acid to the transfer RNA is called :
- (a) RNA polymerase.
 - (b) Aminoacyl t-RNA synthetase.
 - (c) Pyrophosphatase.
 - (d) Peptidase.
86. The crossing over in diploid organism results in :
- (a) Recombination of linked genes.
 - (b) Segregation of alleles.
 - (c) Dominance of genes.
 - (d) Incomplete dominance.
87. Well developed pith is found in :
- (a) Dicot root and dicot stem.
 - (b) Monocot root and monocot stem.
 - (c) Monocot stem and Dicot root.
 - (d) Monocot root and dicot stem
88. The commercial jute is morphologically :
- (a) Phloem fibre.
 - (b) Xylem.
 - (c) Xylem fibre.
 - (d) Phloem.
89. In plants hairy root induction is caused by :
- (a) *Agrobacterium tumefaciens*.
 - (b) *Agrobacterium rhizogenes*.
 - (c) Tobacco Mosaic Virus.
 - (d) *Phytophthora palmivora*.
90. Chromosomes are visualized using :
- (a) Giemsa staining.
 - (b) Toluidine blue.
 - (c) Safranin.
 - (d) None of these.

91. The commonly used fixative for plant tissues is :
(a) Helly's fluid. (b) FAA.
(c) Clark's fluid. (d) None of these.
92. Carrageenan is synthesized from :
(a) Chlorophyceae. (b) Dinophyceae.
(c) Rhodophyceae. (d) Phaeophyceae.
93. Which of the following plants are called Liverworts ?
(a) Riccia. (b) Funaria.
(c) Anthoceros. (d) Usnea.
94. Which of the following is known as the king of spices ?
(a) Cardamom. (b) Black pepper.
(c) Cinnamon. (d) Clove.
95. Which of the following is a soil-born facultative parasite ?
(a) *Mucor*. (b) *Puccinia*.
(c) *Ustilago*. (d) *Fusarium*.
96. The skin colour in humans is :
(a) X-linked inheritance. (b) Quantitative inheritance.
(c) Mitochondrial inheritance. (d) Y-linked inheritance
97. Photoreceptors which regulates different photomorphogenic processes in plants :
(a) Phytochrome. (b) Cytochrome.
(c) Lipochrome. (d) None of these.
98. The headquarters of NBPGR :
(a) Kolkata. (b) Mumbai.
(c) New Delhi. (d) Bengaluru.

99. Plant tissue that forms spaces between leaves, stems and roots allowing gas exchange in plants exposed to flooding condition :

- (a) Aerenchyma.
- (b) Parenchyma.
- (c) Sclerenchyma.
- (d) Collenchyma.

100. The energy rich compound synthesized in mitochondrial matrix during cellular respiration is :

- (a) ADP.
- (b) ATP.
- (c) AMP.
- (d) None of these.