11 - Std
Time : 1.30 Hrs

ACHIEVEMENT TEST – 2023 - 2024

Botany

Marks : 100

I **Choose the most Appropriate Answer.**

1. Which on the following statement about virus is correct?
   a) Possess their own metabolic system b) They are facultative parasites
   c) They contain DNA or RNA d) Enzymes are present
2. Identify the incorrect statement about the Gram positive bacteria
   a) Teichoic acid absent b) High percentage of peptidoglycan is found in cell wall
   c) Cell wall is single layered d) Lipopolysaccharide is present in cell wall
3. Identify the Archaebacterium
   a) Acetobacter b) Erwinia c) Treponema d) Methanobacterium
4. The correct statement regarding Blue green algae is ———
   a) lack of motile structures b) presence of cellulose in cell wall
   c) absence of mucilage around the thallus d) presence of floridean starch
5. Identify the correctly matched pair.
   a) actinomycete - a) Late blight
   b) Mycoplasma - b) lumpy jaw
   c) Bacteria - c) Crown gall
   d) Fungi - d) Sandal spike
6. Which of the plant group as gametophyte as a dominant phase?
   a) Pteridophytes b) Bryophytes c) Gymnosperm d) Angiosperm
7. Which of following represents gametophytic generation in pteridophytes?
   a) Prothallus b) Thallus c) Cone d) Rhizophore
8. The haploid number of chromosome for an angiosperm is 14, the number of chromosome in its endospers would be a) 7 b) 14 c) 42 d) 28
9. Endosperm in gymnosperm is formed a) At the time of fertilization b) Befor fertilization
   c) After fertilization d) Along with the development of embryo
10. Which of the following is polycarpic plant? a) Mangifera b) Bambusa c) Musa d) Agave
11. Roots are a) Descending, negatively geotropic, positively phototropic
    b) Descending, positively geotropic, negatively phototropic
    c) Ascending, positively geotropic, negatively phototropic
    d) Ascending, negatively geotropic, positively phototropic
12. Bryophyllum and Dioscorea are example for a) Foliar bud, apical bud b) Foliar bud, cauline bud
    c) Cauline bud, apical bud d) Cauline bud, foliar bud
13. Which of the following is the correct statement?
    a) In Pisum sativum leaflets modified into tendrils b) In Atalantia terminal bud is modified into thorns
    c) In Nepenthes midrib is modified into lid d) In smilax inflorescence axis is modified into tendrils
14. Select the mismatch pair a) Musa-Unicostate b) Lablab-Trifoliolate
    c) Acalypha-Leaf mosaic d) Allamanda -Ternate phyllotaxy
15. Vexilary aestivation is characteristice of the family
    a) Fabaceae b) Asteraceae c) Solanaceae d) Brassicaeae
16. Gynoecium with united carples is termed as
    a) Apocarpous b) Multicarpellary c) Syncarpous d) None of the above
17. Aggregate fruit develops from
    a) Multicarpellary, apovarpous ovary b)Multicarpellary, Syncarpous ovary
    c) Multicarpellary ovary d) Whole inflorescence
18. In an inflorescence where flowers are borne laterally in an acropetal successions the position of the youngest floral bud shall be a) Proximal b) Distal c) Intercalary d) Anywhere
19. A true fruit is the one where a) Only ovary of the flower develops into fruit
    b) Ovary and calyx of the flower develops into fruit c) Ovary, calyx and thalamus of the flower develops into fruit
    d) All floral whorls of the flower develops into fruit
20. Phylogenetic classification is the most favoured classification because it reflects
    a) Comparative Anatomy b) Number of flowers produced c) Comparative cytology d) Evolutionary relationships
21. The taxonomy which involves the similarities and dissimilarties among the immune system of different taxa intermed as
    a) Chemotaxonomy b) Molecular systematics c) Serotaxonomy d) Numerical taxonomy
22. Which of the following is a flowering plant with nodules containing filamentous nitrogen fixing micro - organisms? a) Crotalaria juncea b) Cycas revoluta c) Cicer arietinum d) Casuarina equisetifolia
23. Flowers are zygomorphic in a) Ceropegia b) Thevetia c) Datura d) Solanum
24. The two subunits of ribosomes remain united at critical ion level of
    a) Magnesium b) Calcium c) Sodium d) Ferrous
25. Sequences of which of the following is used to know the phylogeny.
    a) mRNA b) rRNA c) tRNA d) Hn RNA
26. Many cells function properly and divide mitotically even though they do not have.
    a) Plasma membrane b) Cytoskeleton c) mitochondria d) Plastids
27. Keeping in view the fluid mosaic model for the structure of cell membrance, which one of the following statements is correct with respect to the movement of lipids and proteins from one lipid monolayer to the other. a) Neither lipid nor proteins can flip flop b) Both lipid and proteins can flip flop
    c) While lipids can rarely flip-flop proteins cannot d) While proteins can flip-flop lipids cannot

28. Match the columns and identify the correct option:

Column-I		Column-II
A) Thylakoids	-	(i) Disc-shaped sacs in Golgi apparatus
B) Cristae	-	(ii) Condensed structure of DNA
C) Cisternae	-	(iii) Flat membranous sacs in stroma
D) Chromatin	-	(iv) Infoldings in mitochondria

	A	B	C	D
(1)	(iii)	(iv)	(ii)	(i)
(2)	(iv)	(iii)	(i)	(ii)
(3)	(iii)	(iv)	(i)	(ii)
(4)	(iii)	(i)	(iv)	(ii)

29. The correct sequence in cell cycle is
a) S-M-G1-G2 b) S-G1-G2-M c) G1-S-G2-M d) M-G-G2-S

30. If Mitotic division is restricted in G1 phase of the cell cycle then the condition is known as
a) S Phase b) G2 Phase c) M Phase d) G0 Phase

31. Anaphase promoting complex APC is a protein degradation machinery necessary for proper mitosis of animal cells. If APC is defective in human cell, which of the follwing is expected to occur?
a) Chromosomes will be fragmented b) Choromosomes will not condense
c) Chromosomes will not segregate d) Recombination of chromosomes will occur

32. In S phase of the cell cycle
a) Amount of DNA doubles in each cell b) Amount of DNA remains same in each cell
c) Chromosome number is increased d) Amount of DNA is reduced to half in each well

33. Centromere is required for
a) transcription b) Crossing over c) Cytoplasmic cleavage d) movement of chromosome towards pole

34. Synapsis occur between a) mRNA and ribosomes b) spindle fibres and centromeres
c) two homologous chromoseomes d) a male and a female gamete

35. In meiosis crossing over is initiated at a) Diplotene b) Pachytene c) Leptotene d) Zygotene

36. Colchicine prevents the mitosis of the cells at which of the following stage
a) Anaphase b) Metaphase c) Prophase d) Interphase

37. The paring of homologous chromosomes on meiosis is known as
a) Bivalent b) Synapsis c) Disjunction d) Synergids

38. Water is polar molecule because
a) They have uniform charge distribution b) They have negative charged
c) The hydrogen have slight negative charge d) They have uneven distribution of electrical charge

39. The β-D glucose units in cellulose are liked together by
a) N - acetyl side chains b) N - acetyl D - glucosamine c) 1 → 3 Linkage d) β - (1,4) glycosidic linkage

40. Chitin is a linear polymer of ..... joined together by, β 4 glycosidic linkages. a) β – D glycose units
b) N acetyl - D Glucosamine units c) α-1,4 - glucanmalthohydrolase d) D - glycuronic acid

41. Refer to the given figure and select the correct statement.

i. a, b, and c histogen of shoot apex
ii. a gives rise to medullary rays.
iii. b gives rise to cortex
iv. c gives rise to epidermis
a) i and ii only b) ii and iii only c) i and iii only d) iii and iv only

42. Read the following sentences and identify the correctly matched sentences.
i. In exarch condition, the protoxylem lies outside of metaxylem.
ii. In endarch condition, the protoxylem lie towords the centre.
iii. In centarch condition, metaxylem lies in the middle of the protoxylem.
iv. In mesarch condition, protoxylem lies in the middle of the metaxylem.
a) i, ii and iii only b) ii, iii and iv only c) i ,ii and iv only d) All of these

43. In Gymnosperms, the activity of sieve cells are controlled by
a) Nearby sieve tube members b) Phloem parenchyma ells
c) Nucleus of companion cells d) Nucleus of albuminous cells

44. When a leaf trace extends from a vascular bundle in a dicot stem, what would be the arrangement of vascular tissues in the veins of the leaf? a) Xylem would be on top ad the phloem on the bottom
b) Phloem would be on top and the xylem on the bottom
c) Xylem would encircle the phloem d) Phloem would encircle the xylem

45. Grafting is successful in dictos but not in monocots becasue the dicots have
a) Vascular bundles arranged in a ring b) Cambium for secondary growth
c) Vessels with elements arranged end to end d) Cork cambium

46. Consider the following statements in spring vascular cambium i. is less active
ii.produces a large number of xylary elements iii. forms vessels with wide cavities of these
a) (i) is correct but (ii) and (iii) are not correct b) (i) is not correct but (ii) and (iii) are correct
c) (i) and (ii) are correct but (iii) is not correct d) (i) and (ii) are not correct but (iii) is correct

47. Usually, the monocotyledons do not increase their girth, because
a) They possess actively dividing cambium b) They do not possess actively dividing cambium
c) Ceases activity of cambium d) All are correct

48. In the diagram of lentical identify the parts marked as A,B,C,D

a) A. Phellem, B.Complementary tissue, C.Phelloderm, D.Phellogen
b) A.Complementary tissue, B.Phellem, C.Phellogen, D.Phelloderm
c) A.Phellogen, B.Phellem, C.Phelloderm, D.complementary tissue
d) A. Phelloderm, B.Phellem, C.Complementary tissue, D.Phellogen

49. Inner, darker & harder portion of secondary xylem that cannot conduct water in an older dicot stem is called a) Alburnum b) Bast c) Wood d) Duramen

50. The comon bottle cork is a product of a) Phellem b) Phellogen c) Xylem d) Vascular cambium
51. What is the fate of primary xylem in a dicot stem showing extensive secondary growth?
a) It is retained in the centre of the axis b) It gets crushed
c) May or may not get crushed d) It gets surrounded by primary phloem
52. These questions consist of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four response.
Assertion : In woody stems the amount of heart wood continue to increase year after year
Reason : The activity of cambial ring continues uninterrupted
a) both Assertion and Reason are true but the Reason is a correct explanation of the Assertion.
b) both Assertion and Reason are true but the Reason is not a correct explanation of the Assertion.
c) Assertion is true but the Reason is false d) both Assertion and Reason are false
53. **Assertion:** Secondary growth in dicot roots occurs with the help of vascular cambium and phellogen.
Reason : Vascular cambium is completely primary in origin.
a) both Assertion and Reason are true but the Reason is a correct explanation of the Assertion.
b) both Assertion and Reason are true but the Reason is not a correct explanation of the Assertion.
c) Assertion is true but the Reason is false d) both Assertion and Reason are false
54. In a fully turgid cell
a) DPD = 10 atm; OP = 5 atm; TP = 10 atm b) DPD = 0 atm; OP = 10 atm; TP = 10 atm
c) DPD = 0 atm; OP = 5 atm; TP = 10 atm d) DPD = 20 atm; OP = 20 atm; TP = 10 atm
55. Which among the following is correct? i. apoplast is fastest and operate in nonliving part
ii. Transmembrane route includes vacuole iii. Symplast interconnect the nearby cell through plasmadesmata
iv. Symplast and transmembrance route are in living part of the cell
a) i and ii b) ii and iii c) iii and iv d) i, ii, iii, iv
56. What type of transpiraton is possible in the Xerophyte Opuntia?
a) Stomatal b) Lenticular c) Cuticular d) All the above
57. Stomata of a plant open due to
a) Influx of K^+ b) Efflux of K^+ c) Influx of Cl^- d) Influx of OH^-
58. Munch hypothesis is based on
a) Translocation of food due to TP gradient and imbibition force b) Translocation of food due to TP
c) Translocation of food due to imbibition force d) None of the above
59. Identify correct match.

1) Die back disease of citrus	-	(i) Mo	(B) 1(iii)	2(i)	3(iv)	4(ii)
2) Whip tail disease	-	(ii) Zn	(B) 1(iii)	2(i)	3(iv)	4(ii)
3) Brown heart of turnip	-	(iii) Cu	(C) 1(i)	2(iii)	3(ii)	4(iv)
4) Little leaf	-	(iv) B	(D) 1(iii)	2(iv)	3(ii)	4(i)

60. If a plant is provided with all mineral nutrients but, Mn concentraton is increased, what will be the deficiency?
a) Mn prevent the uptake of Fe, Mg but not ca b) Mn increase the uptake of Fe, Mg and Ca
c) Only increase the uptake of Ca d) Prevent the uptake Fe, Mg, and Ca
61. The element which is not remobilized?
a) Phosphorous b) Potassium c) Calcium d) Nitrogen
62. Match the correct combination.

Minerals		Role				
A Molybdenum	-	1. Chlorophyll	(A) A-1	B-3	C-4	D-2
B Zinc	-	2. Methionine	(B) A-2	B-1	C-3	D-4
C Magnesium	-	3. Auxin	(C) A-4	B-3	C-1	D-2
D Sulphur	-	4. Nitrogenase	(D) A-4	B-2	C-1	D-3

63. Identify the correct statement
i. sulphur is essential for amino acids Cystine and Methionine
ii. Low level of N,K,S and Mo affect the cell division
iii. Non-leguminous plant Alnus which contain bacterium Frankia
iv. Deitrification carried out by nitrosomonas and nitrobacter.
a) I, II are correct b) I, II, III are correct c) I only correct d) all are correct
64. **Assertion (A) :** Increase in Proton gradient inside lumen responsible for ATP synthesis
Reason (R) : Oxygen evolving complex of PS I located on thylakoid membrane facing Stroma, releases H^+ ions. a) Both Assertion and Reason are Ture b) Assertion is True and Reason is False
c) Reason is True and Assertion is False d) Both Assertion and Reason are False
65. Which Chlorphyll molecule does not have a phytol tail? a) Chl - a b) Chl - b c) Chl - c d) Chl - d
66. The correct sequence of flow of electrons in the light reaction is
a) PS II, plastoquinone, cytochrome, PS I, ferredoxin. b) PS I, plastoquinone, cytochrome, PS II, ferredoxin.
c) PS II, ferredoxin, plastoquinone, cytochrome, PS I d) PS II, plastoquinone, cytochrome, PS II, ferredoxin
67. For every CO_2 molecule entering the C_3 cycle, the number of ATP & NADPH required
a) 2ATP + 2 NADPH b) 2ATP + 3 NADPH c) 3ATP + 2 NADPH d) 3ATP + 3 NADPH
68. Identify true statement regarding light reaction of photosynthesis
a) Splitting of water molecule is associate with PS I
b) PS I and PS II involved in the formation NADPH + H^+
c) The reaction center of PS I is Chlorophyll a with absorption peak at 680 nm.
d) The reaction center of PS II is Chlorophyll a with absorption peak at 700 nm.

69. The number of ATP molecules fromed by complete oxidation of one molecule of pyruvic acid is
a) 12 b) 13 c) 14 d) 15
70. During oxidation of two molecules of cytosolic NADH + H^+, number of ATP molecules produced in plants are a) 3 b) 4 c) 6 d) 8
71. The Compound which links glycolysis and kregbs cycle is
a) Succinic acid b) Pyruvic acid c) Acetyl CoA d) Citric acid
72. **Assertion (A) :** Oxidative phosphorylation takes place during the electron transport chain in mitochondria. **Reason (R) :** Succinyl CoA is phosphorylated into succinic acid by substrate phosphorylation
a) A and R is correct. R is correct explanation of A
b) A and R is correct but R is not the correct explanation of A
c) A is correct but R is wrong d) A and R is wrong
73. Which of the following reaction is not involved in Krebs cycle?
a) Shifting of phosphate form 3C to 2C
b) Splitting of Fructose 1,6 bisphosphate of into two molecules 3C compounds.
c) Dephosphorylation from the substrates d) All of these
74. Select the wrong statement from the following.
a) Formative phase of the cells retain the capability of cell division
b) In elongation phase developement of central vacuole takes place
c) In maturation phase thickening and differentiation takes place d) In maturation phase, the cells grow further
75. If the diameter of the pulley is 6 inches of pointer is 10 inches and distance travelled by pointer is 5 inches, Calculate the actual growth in length of plant
a) 3 inches b) 6 inches c) 12 inches d) 30 inches
76. Select the correctly matched one

1) Human urine	- (i) Auxin-B	(A)	1(iii)	2(iv)	3(v)	4(vi)	5(i) 6(ii)
2) Corn gram oil	- (ii) GA3	(B)	1(v)	2(i)	3(ii)	4(iv)	5(vi) 6(iii)
3) Fungus	- (iii) Abscisic acid II	(C)	1(iii)	2(v)	3(vi)	4(i)	5(ii) 6(iv)
4) Herring fish sperm	- (iv) Kinetin	(D)	1(ii)	2(iii)	3(v)	4(vi)	5(iv) 6(i)
5) Unripe maize grains	- (v) Auxin A						
6) Young cotton bolls	- (vi) Zeatin						

77. Seed dormancy allows the plants to a) Overcome unfavourable climatic conditions
b) develop healthy seeds c) reduce viability d) prevent deterioration of seeds
78. Which one of the following method are used to break the seed dormancy?
a) Scarification b) Impaction c) Statification d) All the above
79. The next charge of Zwitter ion is ..... . a) Zero b) Positive c) Negative d) 100
80. Father of Botany is a) Carolus Linnaeus b) Charles Darwin c) Theophrastus d) Aristotle
81. The process which makes major difference between C3 & C4 plants is
a) glycolysis b) Calvin cycle c) Photorespiration d) Respiration
82. Which one of the following acts as a hormone involved in ripening of fruits
a) Napnthalene acetic acid b) Ethylene c) Indole acetic acid d) Zeation
83. Typical growth curve in plants is a) Linear b) Stair-Steps shaped c) Parabolic d) Sigmoid
84. Duramen is present in a) The innerregion of secondary wood b) a part of sap wood
c) The outer region of secondary wood d) region of percycle
85. Which of the following tissues consists of living cells
a) Vessels b) tracheids c) Companion cell d) Sclerenchyma
86. The water potential of pure water is
a) Less than Zero b) more than zero but less than one c) more than one d) Zero
87. Main area of various types of activities of a cell is
a) Nucleus b) mitochondria c) Cytoplasm d) Chloroplast
88. Mycorrhizae arena the example of
a) Fungitasis b) Amensalism c) Antibiosis d) Mutualism
89. In Bryophytes & Pteridophytes, transport of male gametes require.
a) Wind b) Insects c) Birds d) Water
90. Leaves become modified into spines in a) Silk cotton b) Opuntia c) Pea d) Onion
91. Watson and Crick model of DNA double helix is ..... form. a) A b) C c) H d) B
92. Vaxillary aestivation is characteristic of the family
a) Solanaceae b) Brassicaceae c) Fabaceae d) Asteraceae
93. Which organelle is present in higher number in secretory cell?
a) Mitochondria b) Chloroplast c) Nucleus d) Dictyosomes
94. Wound healing is due to
a) ventral meristem b) Secondary meristem c) Primary meristem d) all of these
95. Which of the following is made up of dead cells?
a) Xylem parenchyma b) Collenchyma c) Phellem d) Phloem
96. Who said that transpiration is a necessary evi a) curtis b) steward c) Anderson d) J.C.Bose
97. Which is essential for the growth of root tip? a) Zn b) Fe c) Ca d) Mn
98. Phosphoenol Pyruvate (PEP) is the primary CO_2 acceptor in
a) C3 Plants b) C4 Plants c) C2 Plants d) C3 & C4 Plants
99. Active transport of ions in the cell requires a) High temperature b) ATP c) Alkaline P^H d) Salts
100. Phytochrome is a a) Chrome protein b) Flavo Protein c) Glyco Protein d) Lipo Protein