

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Subject Code No. : **23**

Sl. No. : **1826**

TEST BOOKLET
LECTURERS IN NON-GOVERNMENT
AIDED COLLEGES
BOTANY

Time Allowed : 2 Hours

Maximum Marks : 100

: INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF THE SAME SERIES ISSUED TO YOU.
2. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.

--	--	--	--	--	--	--	--
3. This Test Booklet contains **100** items (questions). Each item (question) comprises four responses (answers). You **have** to select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), you should mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question). If more than one response is darkened it will be considered as wrong answer.
4. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided, by using **BALL POINT PEN (BLACK)**. See instructions in the Answer Sheet.
5. All items (questions) carry equal marks. All items (questions) are compulsory. Each wrong response will result in negative marking of **0.25** mark.
6. Before you proceed to mark (darken) in the Answer Sheet the responses to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions in your **Admission Certificate**.
7. After you have completed filling in all your responses (answers) on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the *Answer Sheet* issued to you. You are allowed to take with you the candidate's copy/second page of the Answer Sheet along with the *Test Booklet* after completion of the examination for your reference.

Candidate's full signature

Invigilator's signature

CO – 3/12

(Turn over)

2016

1. A single large cup shaped chloroplast is the characteristic feature of :
 - (A) *Scenedesmus*
 - (B) *Spirogyra*
 - (C) *Chlamydomonas*
 - (D) *Cosmarium*
2. Blue green alga possess :
 - (A) Chlorophyll b
 - (B) Photosystem II
 - (C) Chlorophyll d
 - (D) Chloroplast
3. 'Coenozoospore' formation is a characteristic feature of :
 - (A) *Volvox*
 - (B) *Spirogyra*
 - (C) *Vaucheria*
 - (D) *Ulothrix*
4. Which class of the following algal groups, is close in pigments to Rhodophyta ?
 - (A) Chlorophyta
 - (B) Phaeophyta
 - (C) Cyanophyta
 - (D) Xanthophyta
5. Which of the following is the source of commercial iodine ?
 - (A) Chlorophyta
 - (B) Phaeophyta
 - (C) Cyanophyta
 - (D) Xanthophyta
6. 'Parasexual phenomenon' was discovered in :
 - (A) *Pythium*
 - (B) *Aspergillus nidulans*
 - (C) *Phytophthora*
 - (D) *Saprolegnia*
7. Which of the following is called as 'Pin molds' ?
 - (A) *Pilobolus*
 - (B) *Mucor*
 - (C) *Saccharomyces*
 - (D) *Aspergillus*
8. 'Yeast' is a :
 - (A) Multicellular Organism
 - (B) Acellular Organism
 - (C) Unicellular Organism
 - (D) Filamentous Organism
9. Mosaic pattern on the leaves are caused by the infection of :
 - (A) Bacterium
 - (B) Nematode
 - (C) Virus
 - (D) Fungi

10. Citrus canker is caused by :
- (A) Bacterium
 - (B) Nematode
 - (C) Virus
 - (D) Fungi
11. The pathogen causing rust of wheat produces sspores of :
- (A) Two types
 - (B) Three types
 - (C) Five types
 - (D) Four types
12. Lemon shaped sporangium with a distinct papilla is the characteristic feature of :
- (A) *Pythium*
 - (B) *Phytophthora*
 - (C) *Aspergillus*
 - (D) *Albugo*
13. Single stranded RNA helix is present in :
- (A) λ -Phage
 - (B) T-Phage
 - (C) TMV
 - (D) Cyanophages
14. Which of the following is a temperate phage ?
- (A) T-Phage
 - (B) Cyanophages
 - (C) λ -Phage
 - (D) TMV
15. Cyanobacteria differ from bacteria in :
- (A) Cell wall
 - (B) Non-presence of mitochondria
 - (C) Non-presence of nucleus
 - (D) Evolution of Oxygen
16. Conjugation in bacteria was discovered by :
- (A) Lederburg and Tatum in 1946
 - (B) Avery, McLeod and McCarty in 1944
 - (C) Griffith in 1928
 - (D) Jacob and Adelburg in 1959
17. 'Partial diploids' in bacteria occurs after :
- (A) Transduction
 - (B) Sexduction
 - (C) Transformation
 - (D) Reduction
18. Mucopeptide present in the cell wall of the bacterium is a polymer made up of :
- (A) Alternating units of NAG and NAM joined by β -1-4 linkages
 - (B) Alternating units of NAG and NAM joined by β -1-3 linkages
 - (C) Alternating units of NAG and NAM joined by β -1-5 linkages
 - (D) Alternating units of NAG and NAM joined by β -2-6 linkages

19. Gram negative bacteria are unable to retain the Gram Stain because of :
- High level of teichoic acid
 - High level of lipid content
 - High level of mucopolysaccharide
 - Higher number of pores in cell wall
20. Which of the following is an archaea ?
- Halobacterium*
 - Salmonella*
 - Pseudomonas*
 - Clostridium*
21. Which of the following is an aquatic bryophyte ?
- Riccia fluitans*
 - Sphagnum sp*
 - Marchantia*
 - Anthoceros sp*
22. Which of the following bryophytes has symbiotic association with blue green alga ?
- Riccia*
 - Anthoceros*
 - Sphagnum*
 - Marchantia*
23. Which of the following is referred as 'bog moss' ?
- Riccia*
 - Anthoceros*
 - Sphagnum*
 - Marchantia*
24. Who was a bryologist among the following ?
- R. N. Singh
 - M. O. P. Iyengar
 - S. R. Kashyap
 - Birbal Sahni
25. '*Anthoceros*' may be collected from :
- Rajasthan
 - Himalaya
 - Vindhya
 - Sea Shore
26. Which of the following is called as 'resurrection' plants ?
- Psilotum*
 - Selaginella*
 - Equisetum*
 - Marsilea*
27. 'Glossopodium' is related with :
- Ligule of *Selaginella*
 - Leaves of *Isoetes*
 - Leaves of *Marsilea*
 - Leaves of *Pteridium*

28. 'Sporocarps' are associated with :
- (A) *Selaginella*
 (B) *Marsilea*
 (C) *Equisetum*
 (D) *Pteridium*
29. 'Amphiphloic Siphonostele' is the characteristic feature of :
- (A) T. S. rhizome of *Marsilea*
 (B) T. S. petiole of *Marsilea*
 (C) T. S. root of *Marsilea*
 (D) T. S. leaflet of *Marsilea*
30. The seed known by the name 'chilgoza', that is used as dry fruit belongs to :
- (A) *Zamia*
 (B) *Pinus longifolia*
 (C) *Cedrus deodara*
 (D) *Pinus gerardiana*
31. Coralloid root of *Cycas* is distinguished from the angiospermic root by the :
- (A) Absence of pith
 (B) Absence of algal zone
 (C) Presence of algal zone
 (D) Having xylem tissue
32. Which of the following is known as living fossil ?
- (A) *Pinus lognifolia*
 (B) *Cedrus deodara*
 (C) *Ginkgo biloba*
 (D) *Taxus baccata*
33. 'Winged pollen grains' are the characteristic features of :
- (A) *Cycas*
 (B) *Pinus*
 (C) *Ginkgo*
 (D) *Taxus*
34. The leaves of *Cycas* shows :
- (A) Hydrophytic characters
 (B) Mesophytic characters
 (C) Xerophytic characters
 (D) Lithophytic characters
35. *Cycas revoluta* is widely grown as :
- (A) Medicinal Plant
 (B) Ornamental Plant
 (C) Wood Yielding Plant
 (D) Oil Yielding Plant
36. 'Sulphur Showers' on the Himalaya hills is related with pollen grains of :
- (A) *Cycas*
 (B) *Taxus*
 (C) *Cedrus*
 (D) *Pinus*
37. Which of the following is most primitive stele ?
- (A) Ectophloic Siphonostele
 (B) Amphiphloic Siphonostele
 (C) Cladosiphonic Siphonostele
 (D) Actinostele

38. 'Synangium' is the characteristic feature of :
- Lycopodium*
 - Equisetum*
 - Selaginella*
 - Psilotum*
39. Which of the following statement is incorrect regarding sporophyte of *Anthoceros* ?
- Towards physiological independence
 - Reduction in sporogenous tissues
 - Increased amount of sterile tissues
 - Totally independent from the gametophyte
40. Which of the following statement is incorrect with regard to *Riccia* for its reproduction ?
- Fragmentation
 - Adventitious branches
 - Protonema
 - Tubers
41. Term 'geitonogamy' refers :
- Pollination of stigma by the pollen of same flower of the plant
 - Pollination of stigma by the pollen of another flower from different plants
 - Pollination of stigma by the pollen of different flowers of the same plant
 - Pollination of stigma from the pollen of unrelated plant
42. Malacophilous flowers are :
- Insect pollinated
 - Bird pollinated
 - But pollinated
 - Slug and small pollinated
43. 'Pollinium' formation is the characteristic feature of :
- Brassica*
 - Orchids*
 - Calotropis*
 - Trapa*
44. Generally the endosperm in angiosperms is :
- Haploid
 - Diploid
 - Triploid
 - Tetraploid
45. 'Aril' is found in :
- Litchi
 - Mango
 - Orange
 - Apple

46. 'Velamen tissues' are found in :
 (A) Assimilatory roots
 (B) Aerial roots
 (C) Reproductive roots
 (D) Respiratory roots
47. 'Prop roots' are found in :
 (A) Maize
 (B) Banyan
 (C) Screw Pine
 (D) Mango
48. 'Pneumatophores' are found in :
 (A) *Trichosanthes*
 (B) *Rhizophora*
 (C) *Psychotria*
 (D) *Dioscorea*
49. 'Asparagus' is an example of :
 (A) Thorn
 (B) Cladode
 (C) Spur
 (D) Phylloclade
50. 'Offset' is a subaerial modification for vegetative propagation and perennation found in :
 (A) *Mentha*
 (B) *Eichornia*
 (C) *Cynodon*
 (D) *Imperata*
51. 'Amorphophallus campanulatus' is an example of :
 (A) Rhizome
 (B) Corm
 (C) Bulb
 (D) Stem tuber
52. 'Phyllode' is a modification of :
 (A) Stipule
 (B) Stipe
 (C) Petiole
 (D) Leaflet
53. The out growth from the leaf base which usually protects the young axillary buds :
 (A) Stipel
 (B) Stipule
 (C) Ligule
 (D) Mesopodium
54. Figs possess typical type inflorescence known as :
 (A) Coenanthium
 (B) Polychasium
 (C) Hypanthodium
 (D) Monochasium
55. 'Verticillaster' is a complex inflorescence found in :
 (A) Euphorbiaceae
 (B) Labiatae
 (C) Caryophyllaceae
 (D) Ranunculaceae

56. 'Syngenesious' stamens are the characteristic features of :
- (A) Cucurbitaceae
(B) Compositae
(C) Oxalidaceae
(D) Euphorbiaceae
57. A condition, when transverse ovule may be bent like a horse shoe so that micropyle is brought nearer to the chalaza known as :
- (A) Anotropous
(B) Orthotropous
(C) Amphitropous
(D) Campylotropous
58. New roots growing from near the base of radicle are called as :
- (A) Fibrous roots
(B) Tap roots
(C) Seminal roots
(D) Coralloid roots
59. Which of the following families has false septum in the ovary ?
- (A) Papaveraceae
(B) Brassicaceae
(C) Apocyanaceae
(D) Ranunculaceae
60. Siliqua is a fruit of family :
- (A) Cruciferae
(B) Malvaceae
(C) Liliaceae
(D) Caesalpinaceae
61. A population of individuals of species which are genetically different :
- (A) Ecotype
(B) Ecad
(C) Ecotone
(D) Biotype
62. Which of the following groups of the plants are rooted hydrophytes with floating leaves ?
- (A) *Trapa, Nelumbo, Nymphaea*
(B) *Salvinia, Trapa, Marsilea*
(C) *Marsilea, Trapa, Spirodela*
(D) *Spirodela, Trapa, Nelumbo*
63. Vivipary is found in :
- (A) *Rhizophora*
(B) *Rhizopus*
(C) *Ficus*
(D) *Tectona*
64. 'Silent Valley' of Kerala is preserved because :
- (A) It has rare species of plants and animals
(B) Soil is rich in minerals
(C) The area of land were used extensively for agricultural purpose
(D) It has pine trees

65. Which of the following is/are the stage(s) of xerosere ?
- Crustose lichen stage
 - Foliose lichen stage
 - Reed swamp stage
 - Both (A) and (B)
66. It is said that the 'Tajmahal may be destroyed due to :
- Flood in Yamuna River
 - Decomposition of marbles due to high temperature
 - Air pollutants released from oil refinery of Mathura
 - Sinking of the Tajmahal in the Yamuna River
67. The scientist who developed 'Avena Coleoptile Curvature Test' was :
- Darwin
 - Went
 - Skoog
 - Sachs
68. Root initiation is promoted by :
- Auxin
 - Gibberellins
 - Abscic acid
 - Kinetin
69. Which of the following plants are day neutral plants ?
- Mirabilis*, *Lycopersicum esculentum* and *Pisum sativum*
 - Glycine max* and *Mirabilis*
 - Lycopersicum esculentum* and *Beta Vulgaris*
 - Glycine max* and *Pisum sativum*
70. Type of culture in which plants grown in aqueous nutrient solutions is known as :
- Tissue culture
 - Hydroponic culture
 - Hydroculture
 - Aqueous culture
71. Most of the plants absorb nitrogen in the form of :
- Nitrates
 - Ammonical nitrogen
 - Molecular nitrogen
 - Organic nitrogen
72. Solar energy transfer among pigments in the antenna of plants, is a purely :
- Chemical phenomenon
 - Physical phenomenon
 - Biological phenomenon
 - Radiation phenomenon
73. PSII oxidizes water to O₂ in the :
- Stroma
 - Thylakoid membrane
 - Thylakoid lumen
 - Stroma lamellae

74. Carotenoids give their characteristic orange colour in 400-500 nm region because :
- (A) It is long polyenes
 - (B) It has multiple conjugated double bonds
 - (C) It has no porphyrin like ring structure
 - (D) It has no Mg in its molecules
75. Which type of leaves show burst of fluorescence (so called Katusky effect) ?
- (A) An actively photosynthesizing leaves
 - (B) Photosynthetic leaves for few first moment of illumination
 - (C) Leaves in shades
 - (D) First leaves emerging after germination
76. Which of the following type of transporters use energy ?
- (A) Symporter
 - (B) Antiporter
 - (C) ABC transporter
 - (D) Uniporter
77. Which statement is false with regard to casparian strip ?
- (A) The presence of casparian strip allows the plant to maintain a higher ion concentration in the xylem than soil environment
 - (B) Casparian strip is a suberised thickening in the wall of endodermis
 - (C) Casparian strip in the endodermis is a curse to the plant
 - (D) Casparian strip prevent ion diffusing back out of the root through the apoplast
78. The nonpolar molecules show a tendency to associate with another in water compared with other low polar solvents. This tendency is called :
- (A) Hydrophillic effect
 - (B) Hydrophobic effect
 - (C) Colloidal effect
 - (D) Emulsifying effect
79. When Ψ_S and Ψ_P are not easily separated into their effects then there is a reference of :
- (A) Water potential
 - (B) Chemical potential
 - (C) Matric potential
 - (D) Thermal potential

80. Facilitated diffusion occurs by the membrane pore in thermodynamically uphill region via :
- (A) Antiporter
 - (B) Symporter
 - (C) Channels
 - (D) F1 Type ATPases
81. Zygotene is characterized by :
- (A) Synapsis, Crossing over, Tetrad formation
 - (B) Synapsis, Bivalents, Crossing over
 - (C) Recombination nodules, Synapsis and Bivalents
 - (D) Bivalents, Synapsis, Tetrad formation
82. Four separate chromatids are visible in which of the following stages of Meiotic prophase-I ?
- (A) Pachytene
 - (B) Diplotene
 - (C) Zygotene
 - (D) Diakinesis
83. Prophase of Mitosis possess the following events :
- (A) Condensation of chromosomes, Disassembly of cytoskeletons, Randomly placed chromosome in active motion
 - (B) Disappearance of nuclear envelope, Disassembly of nucleolus, Orderly arranged chromosome in non-active motion
 - (C) Formation of large tubulin molecules, Condensation of chromosomes, Nucleolus intact, Nuclear membrane disintegrate
 - (D) Disintegration of nuclear membrane, Disorganization of nucleolus, Non-condensing chromosomes with non-movement
84. Which of the following combination is correct for chromatin ?
- (A) DNA 50%, Histone 30%, Non-histone 20%
 - (B) DNA 20%, Histone 20%, RNA 20%, Non-histone 20%
 - (C) DNA 31%, Histone 26%, RNA 5%, Non-histone 28%
 - (D) DNA 35%, Histone 30%, RNA 10%, Non-histone 25%
85. Which of the following is arginine rich ?
- (A) H1
 - (B) H2A
 - (C) H2B
 - (D) H3

86. Cytoskeleton term is applied to :
- Golgi-bodies and Endoplasmic reticulum of the cells
 - Golgi-bodies and microtubules of the cells
 - Fabric of microtubules, microfilaments and gliobodies
 - Fabric of microtubules, microfilaments and intermediate filaments
87. Which of the following sequence is correct with respect to time taken by stages in a cell division ?
- Pro>Meta>Ana>Tel
 - Pro>Ana>Meta>Tel
 - Pro>Tel>Meta>Ana
 - Tel>Pro>Meta>Ana
88. Randomly placed chromosome in active motion in mitotically dividing cell is a characteristic feature of :
- Metaphase
 - Anaphase
 - Prometaphase
 - Telophase
89. Cell cycle is regulated by the master control molecules known as :
- Transferases
 - Lipases
 - Kinases
 - Dehydrogenases
90. How many DNA molecule(s) will be there in a mitotic metaphase chromosome of a dividing cell ?
- One
 - Many
 - Two
 - Not certain
91. NOR occurs in the region of chromosome :
- Primary constriction
 - Secondary constriction
 - Telomeric region
 - Kinetochoic region
92. When we cross heterozygous F1 red and tall plant with double recessive white and dwarf plant, they may be assigned to :
- 1 : 1 : 1 : 1 test cross
 - 9 : 3 : 3 : 1 test cross
 - 7 : 9 back cross
 - 1 : 1 : 1 : 1 back cross
93. Secondary constrictions are distinguished from primary constrictions in :
- Absence of DNA molecule
 - Presence of kinetochore
 - Presence of centromere
 - Absence of marked angular deviations of the chromosomal segments during anaphase

94. The heterochromatin condensed only in certain cell types or at special stages of development is appropriately referred as :
- (A) Constitutive heterochromatin
 - (B) Facultative heterochromatin
 - (C) Euchromatin
 - (D) Chromatin
95. Core particle of nucleosome obtained after extensive digestion by the enzyme contains only :
- (A) 200 bp
 - (B) 180 bp
 - (C) 146 bp
 - (D) 136 bp
96. Which of the following ratio relates with the complementary genes ?
- (A) 13 : 3
 - (B) 12 : 3 : 1
 - (C) 9 : 7
 - (D) 15 : 1
97. Coupling and repulsion phenomenon are associated with :
- (A) Hybridisation
 - (B) Polyploidy
 - (C) Crossing Over
 - (D) Linkage
98. Fusion of nucleated and enucleated different somatic cells results in the formation of :
- (A) Hybrids
 - (B) Cybrids
 - (C) Chytrids
 - (D) Dihybrids
99. The region of the attachment of RNA polymerase in **lac operon** is called :
- (A) Operator
 - (B) Promoter
 - (C) Regulator
 - (D) Structural
100. Which of the following is a feature of eukaryotic transcription ?
- (A) RNAs are transcribed by a single RNA polymerase
 - (B) mRNAs are short lived
 - (C) mRNAs have their starting ends blocked by 7-Methyl-guanosine
 - (D) mRNAs don't contain PolyA segment to their 3' end

.....

SPACE FOR ROUGH WORK