

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

COMBINED COMPETITIVE (PRELIMINARY) EXAMINATION, 2011

Serial No. 000766

BOTANY
Code No. 03

B

Time Allowed : Two Hours

Maximum Marks : 300

INSTRUCTIONS

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.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE RESPONSE SHEET.
3. You, have to enter your Roll Number on this Test Booklet in the Box provided alongside.

Your Roll No.

Do NOT write anything else on the Test Booklet.
4. This Booklet contains 120 items (questions). Each item comprises *four* responses (answers). You will select *one* response which you want to mark on the Response Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
5. In case you find any discrepancy in this test booklet in any question(s) or the Responses, a written representation explaining the details of such alleged discrepancy, be submitted within three days, indicating the Question No(s) and the Test Booklet Series, in which the discrepancy is alleged. Representation not received within time shall not be entertained at all. The Commission shall take appropriate decision on the representations received in accordance with the Rules which shall be final.
6. You have to mark all your responses **ONLY** on the separate Response Sheet provided. *See directions in the Response Sheet.*
7. All items carry equal marks. Attempt ALL items. Your total marks will depend only on the number of correct responses marked by you in the Response Sheet.
8. Before you proceed to mark in the Response Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Response Sheet as per instructions sent to you with your Admit Card and Instructions.
9. While writing Centre, Subject and Roll No. on the top of the Response Sheet in appropriate boxes use **"ONLY BALL POINT PEN"**.
10. After you have completed filling in all your responses on the Response Sheet and the examination has concluded, you should hand over to the Invigilator only the Response Sheet. You are permitted to take away with you the Test Booklet.

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SEAL

1. 'Mitochondria' were first described by :
(A) E. Buchnon (1930) (B) Warburg (1920)
(C) Richard Altman (1890) (D) Krebs (1897)
2. Starch storing plastids are called as :
(A) Amyloplasts (B) Leucoplasts
(C) Etioplasts (D) Chloroplasts
3. *Avicennia* is :
(A) Mesophyte (B) Epiphyte
(C) Hydrophyte (D) Mangrove
4. The nucleus is present in the following :
(A) Viruses (B) Bacteria
(C) Blue green Algae (D) Fungi
5. 'Procambium' in the Apical meristems is :
(A) Homogenous (B) Heterogenous
(C) Secondary meristem (D) None of these
6. The following is a 'complex tissue' :
(A) Sclerenchyma (B) Xylem
(C) Parenchyma (D) Collenchyma
7. Medullary vascular bundles are present in :
(A) Boerhaavia (B) Strychnos
(C) Bignonia (D) Begonia
8. 'Amphicribal vascular bundles' are common in :
(A) Pteridophytes (B) Monocot
(C) Roots (D) Flowers
9. 'Browning' disease of cauliflower is due to :
(A) Boron deficiency symptoms (B) Copper deficiency
(C) *Pseudomonas* infection (D) Fungal infection

10. The function of chloroplasts in a green plant is :
 (A) Photo respiration (B) Photosynthesis
 (C) Respiration (D) Transport
11. The 'Sieve elements' of phloem are always associated with :
 (A) Albuginous cells (B) Parenchyma cells
 (C) Companion cells (D) Fibres
12. 'Fibre' like projections sometimes present in the sieve pores are called as :
 (A) P-Protein (B) F-protein
 (C) Slime (D) None of these
13. The 'Vascular cambium' is a :
 (A) Secondary Lateral meristem (B) Primary meristem
 (C) Rib meristem (D) Plate meristem
14. 'Aerenchyma' is commonly present in :
 (A) Mesophytes (B) Hydrophytes
 (C) Xerophytes (D) Halophytes
15. 'Closed' bundles are common in :
 (A) Monocot stems (B) Roots
 (C) Pteridophytes (D) None of these
16. Medullary vascular bundles are present in the following plant :
 (A) Bignonia (B) Achzranthus
 (C) Peperomia (D) Clematis
17. 'Intraxylary' and 'Interxylary' 'phloem' are present in the stems of the following plant :
 (A) Combretum (B) Strychnos
 (C) Sapindus (D) Piper
18. The antibiotics 'Tetracyclines' are formed by :
 (A) Streptomycetes (B) Penicillium
 (C) Aspergillus (D) Trichoderma

19. 'Etagen meristem' is present in the following :
 (A) 'Smilax' stem (B) Clematis stem
 (C) Aristolochia stem (D) Cucurbita stem
20. 'Tension wood' is formed over the bending stems of :
 (A) Gymnosperms (B) Conifer trees
 (C) Monocots (D) Dicotyledons
21. 'Transfer cells' present in minor veins of leaves were discovered by :
 (A) Wolff (1759) (B) Schmidt (1920)
 (C) Gunning & Pate (1972) (D) Feldman (1974)
22. The following plant has 'trilacunar node' :
 (A) Clerodendron (B) Azadirachta indica
 (C) Arolia (D) Scheffleria
23. After protein biosynthesis protein folding takes place with the help of :
 (A) Lipids (B) Chaperone proteins
 (C) Lipo-proteins (D) Hsps
24. 'Transposons' were first discovered in :
 (A) The Maize genome (B) Peas
 (C) Mice (D) None
25. The following is involved in DNA repair :
 (A) Lex A protein (B) Rec A protein
 (C) RAD protein (D) XP protein
26. The following is a 'transgenic' rice variety :
 (A) TN-1 (B) IET-4141
 (C) Golden Rice (D) Punjab Rice
27. The following tomato variety delays fruit ripening :
 (A) Pusa rubi (B) Flavr Savr
 (C) Rajasthan Red (D) HP-21
28. Ribosomes in Prokaryotes are :
 (A) 80s type (B) 60s type
 (C) 70s type (D) None of these

29. 'Viroids' were discovered by :
 (A) Winogradsky, O (B) Stanley, W
 (C) Koch, R (D) T.O. Diener
30. 'Mad Cow' 'disease' in France was caused by :
 (A) Bacteria (B) Mycoplasmas
 (C) Prions (D) Viruses
31. 'Heterocysts' are present in the following :
 (A) Chlamydomonas (B) Volvox
 (C) Nostoc (D) Cladophora
32. 'Intercalary Meristem' is present in the algal filaments of :
 (A) Chara (B) Nitella
 (C) Ectocarpus (D) Porphyra
33. The bacteriophages which do not lyse their host cells are called :
 (A) P-Phages (B) Temperate phage
 (C) Resistant phage (D) Virulent phage
34. 'Cucumber mosaic virus' is transmitted by :
 (A) Nematodes (B) Soil
 (C) Mechanical means (D) Aphids
35. The function of 'mitochondria' is :
 (A) Osmoregulation (B) Protein synthesis
 (C) Electron transport and ATP synthesis (D) Glycolysis
36. Velamen tissue is present in :
 (A) Trinospora root (B) Vanda aerial root
 (C) Maize root (D) Cucurbita tendrils
37. 'Diplanetism' is common in the life cycle of :
 (A) Saprolegnia (B) Peronospora
 (C) Pythium (D) Phytophthora

38. 'Open' type vascular bundles are present in :
 (A) Monocot stems (B) Monocot secondary stems
 (C) Primary stems of Dicots (D) All roots
39. 'Bitunicate Asci' are present in :
 (A) Pyrenomycetes (B) Loculoascomycetes
 (C) Discomycetes (D) Hemiascomycetes
40. 'Phragmobasidia' are present in the following :
 (A) Hymenomycetes (B) Rust fungi
 (C) Gasteromycetes (D) Agonomycetes
41. The following is a plant parasite :
 (A) *Cephaleuros viriscens* (B) *Coleochaete scutata*
 (C) *Oedogonium Kumarzensis* (D) *Vaucheria terrestris*
42. 'Aflatoxins' in foods are due to :
 (A) Algal toxins (B) Ergot
 (C) Clostridial Bacteria (D) *Aspergillus flavus*
43. 'Club root' of cabbage is caused by :
 (A) *Plasmodiophora brassicae* (B) *Albugo candida*
 (C) *Xanthomonas campestris* (D) *Aphanomyces*
44. "Potato scab" disease is due to :
 (A) Phytophthora (B) Streptomyces
 (C) Nocardia (D) Pseudomonas
45. Branched assimilatory filaments are present in the following Bryophyte :
 (A) Riccia (B) Plagiochasma
 (C) Marchantia (D) Anthoceros
46. The gametophyte of Anthoceros contain the following alga as an endophyte :
 (A) Nostoc (B) Anabaena
 (C) Chlorella (D) None of these

47. 'Algal zone' is present in the root system of the following plants :

- (A) Lichens (B) Coralloid roots of Cycas
(C) Gnetum (D) None of these

48. 'Manoxylic wood' is common in :

- (A) Cycas (B) Pinus
(C) Gnetum (D) None of these

49. 'Window like field pits' are common in the wood of :

- (A) Picea (B) Araucaria
(C) Taxodium (D) Pinus

50. The following plant is called 'Sago' palm :

- (A) *Cycas revoluta* (B) *C. Circinala*
(C) *C. beddomi* (D) *C. pectinata*

51. The under mentioned gymnosperm plant is called as 'Living Fossil' :

- (A) The *Cycas* (B) *Ginkgo biloba*
(C) *Gnetumula* (D) *Ephedra*

52. The botanical name of 'iceland moss' is :

- (A) *Funaria* (B) *Cetraria islandica*
(C) *Cladonia* (D) *Moss plant*

53. Club root of cabbage is due to :

- (A) *Pseudomonas solanaceanum* (B) *Plasmodiophora brassicae*
(C) *Fusarium* (D) *Synchytrium*

54. This Botanist introduced the 'Binomial' nomenclature to the plants :

- (A) Theophrastus (B) Linnaeus
(C) Bessy (D) Bentham and Hooker

55. $\oplus \underset{\text{+}}{\text{P}}_3 + 3$ or $(3 + 3) A_3 + 3 G_{(3)}$ is the floral formula of the family :

- (A) Palmae (B) Liliaceae
(C) Orchidaceae (D) Gramineae

56. $\text{Br, } 0/0 \underset{\text{+}}{\text{K}}_{(9)} C_1 + 2 + (2). A(9) + 1 G \underline{1}$ is the floral formula of the family :

- (A) Mimosae (B) Papilionaceae
(C) Rosaceae (D) Annonaceae

57. 'Gynostegium' is the character of the family :

- (A) Compositae (B) Orchidaceae
(C) Asclepiadaceae (D) Capparidaceae

58. The floral formula $-\oplus$ or $0/0 \underset{\text{+}}{\text{K}}_{(9)}$ or $O C_2 A_3 G_{(2)}$ belongs to the family :

- (A) Umbelliferae (B) Cactaceae
(C) Cucurbitaceae (D) Casuarinaceae

59. 'Gonophyll theory' on origin of Angiosperms was proposed by :

- (A) Meeure (1961) (B) Melville (1963)
(C) Eames (1961) (D) Bessey (1915)

60. The following is a fossil wood :

- (A) Carytonia (B) Gnetales
(C) Pentoxylon (D) Bennettiales

61. The induction of flowering in plants by low temperatures is called :

- (A) Floral induction (B) Vernalization
(C) Artificial flowering (D) None of these

62. The movements of tendrils of cucurbitaceae around a support are called as :

- (A) Rotation movements (B) Growth movements
(C) Nutation movements (D) Tropic movements

63. Those plants which require a light duration of less than 12 hours for flowering are called :

- (A) Short day plants (B) Long day plants
(C) Day neutral plants (D) None of these

64. 'Honey' usually contains :

- (A) Dust (B) Insect parts
(C) Plant Debris (D) Pollen grains

65. Stimulation of growth of axillary buds after the removal of terminal bud in a plant is called :

- (A) Induction of growth (B) Removal of Apical dominance
(C) Induction for Flowering (D) Application of Auxins

66. The following is a growth inhibitor :

- (A) Abscic acid (B) Ethylene
(C) Jasmonic acid (D) Kineus

67. The term 'Florigen' applies to :

- (A) Steroids (B) Gibberellins
(C) Sex hormones (D) Androgens

68. The pigments involved in induction of flowering are called :

- (A) Plastids (B) Chlorophylls
(C) Phytochromes (D) Plastoquinones

69. Zinc deficiency in paddy results in :

- (A) Khaira disease (B) Malformation
(C) Chlorosis (D) Blackening of the plants

70. The following is a free living aerobic Nitrogen fixer :

- (A) Chlorobium (B) Azotobacter
(C) Clostridium (D) Beijerinckia

71. 'Double helix' model of DNA was constructed by :

- (A) Robertson (1950) (B) Meselson and Stahl (1958)
(C) Watson and Crick (1953) (D) Chargaff (1940)

72. 'Interferons' are :

- (A) DNA molecules (B) RNA
(C) Lipids (D) Proteins

73. The following is a C_4 -plant :

- (A) Wheat (B) Paddy
(C) Sugar cane (D) Tomato

74. The following secondary metabolite contain Nitrogen component :

- (A) Terpenoids (B) Flavonoids
(C) Steroids (D) Alkaloids

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75. The following is a fruit ripening hormone :

- (A) Auxins (B) Gibberellins
(C) Ethylene (D) None of these

76. The useful part of *Cinnamomum zeylonicum* is :

- (A) Fruit (B) Leaves
(C) Bark (D) Wood

77. Leguminous root nodules possess the following pigment :

- (A) Leucoplasts (B) Chloroplasts
(C) Haemoglobin (D) Leghaemoglobin

78. White rust of mustard is due to :

- (A) *Albugo candida* (B) *Puccinia recondita*
(C) *Uromyces brassicae* (D) *Claviceps sp.*

79. 'Whip smut' of sugarcane is caused by :

- (A) *Claviceps microcephala* (B) *Ustilago scitaminea*
(C) *Urocystis capulae* (D) *Phragmidium officinarum*

80. 'Agrimycin' is used to control :

- (A) Fungal diseases (B) Viral diseases
(C) Bacterial diseases (D) Mycoplasma diseases

81. 'Captan' is used as :

- (A) Spray for foliar diseases (B) For seed treatment
(C) As insecticide (D) Viricidal for viral diseases

82. 'Wheat stem rust' is due to the following pathogen :

- (A) *Puccinia graminis tritici* (B) *Puccinia striiformis*
(C) *Uromyces capulae* (D) *Ravenelia reliana*

83. Angular leaf blight of cotton plant is due to the following pathogen :

- (A) *Xanthomonas malvacearum* (B) *Pseudomonas solanacearum*
(C) *Phytophthora parasitica* (D) *Alternaria tenuis*

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[Turn over

84. 'Alcohol' is formed by the process of:
 (A) Fermentation (B) Respiration
 (C) Rotting (D) None of these
85. The following are the primary producers of an aquatic ecosystem :
 (A) Grasses (B) Typha etc
 (C) Zooplankton (D) Phytoplankton
86. The main cause of 'Global warming' is :
 (A) CFCs (B) Increase in CO₂
 (C) CH₄ increase (D) Ozone depletion
87. The Botanical name of 'Indian rosewood' that yields high quality of timber is :
 (A) *Pterocarpus santalinus* (B) *Anogeissus latifolia*
 (C) *Dalbergia latifolia* (D) *Albizia lebbek*
88. The 'camphor' is obtained from the following plant :
 (A) *Cinnamomum camphora* (B) *Cinnamomum zeylanicum*
 (C) *Santalum album* (D) *Mentha indica*
89. The 'TEA' is made from the leaves of the plant :
 (A) *Cocos cola* (B) *Carica sinensis*
 (C) *Chenopodium alba* (D) *Camellia sinensis*
90. The stain 'Haema toxylin' is derived from the plant :
 (A) *Haematoxylon Campechianum* (B) Brazilwood
 (C) *Chlorophora tonctoria* (D) *Acacia catechu*
91. The Botanical name for Turmeric plant is :
 (A) *Morinda cotrifolia* (B) *Curcuma longa*
 (C) *Zingiber officinalis* (D) *Lawsonia inermis*
92. 'Turpentine' is obtained from :
 (A) *Pinus roxburghii* (B) *Butea monosperma*
 (C) *Azadirachta indica* (D) *Acacia arabica*
93. Botanical name of Banana is :
 (A) *Musa indica* (B) *Heliconia*
 (C) *Musa maritima* (D) *Musa paradisiaca*

94. The following plant products are used in treating high blood pressure in human beings :
 (A) *Rauwolfia serpentina* (B) *Podophyllum hexandra*
 (C) *Allium sativum* (D) *Allium cepa*
95. 'Quinine' the best medicine for curing malaria, is derived from :
 (A) *Ephedra gerardiana* (B) *Acacia catechu*
 (C) *Mimusops elongi* (D) *Cinchona officinalis*
96. The following plant is worshipped as a 'holy' herb :
 (A) *Ficus religiosa* (B) *Azadirachta indica*
 (C) *Ocimum sanctum* (D) *Calotropis procera*
97. The botanical name of 'Saffron' yielding plant is :
 (A) *Piper betel* (B) *Crocus sativus*
 (C) *Cuminum cyminum* (D) *Centella asiatica*
98. 'Sohanjana gum' is obtained from the bark of :
 (A) *Morinda tinctoria* (B) *Bixa orellina*
 (C) *Moringa oleifera* (D) *Garcinia cowa*
99. 'Mesquite' is derived from :
 (A) *Prosopis julifera* (B) *Jatropha indica*
 (C) *Jatropha grandulifera* (D) *Cochlospermum religiosum*
100. 'Indian gum arabic' is obtained from the bark of :
 (A) *Astragalus gummifer* (B) *Prunus amygdali*
 (C) *Acacia nilotica* (D) *Butea monosperma*
101. 'The Earth' is the planet in the solar system. Its proximity to the 'SUN' is :
 (A) 93 million miles (B) 886 million mile
 (C) 142 million miles (D) 483 million miles
102. The age of the Earth is around :
 (A) 1 billion years (B) 5 billion years
 (C) 15 billion years (D) 50 billion years
103. Cellular energy is available in the form of :
 (A) ATPs (B) DNA
 (C) RNA (D) Proteins

104. The origin of the first life on the Earth due to protobionts was proposed by :

- (A) Aristotle (B) Oparin
(C) Wallace (D) Theophrastus

105. The function of 'Sclereids' is :

- (A) Mechanical support (B) Conduction
(C) Absorption (D) Protection

106. The doctrine of "Struggle for existence" is a part of :

- (A) Phylogeny (B) Darwinism
(C) Lamarckism (D) Evolution

107. The "recapitulation theory" was proposed by :

- (A) Ernst Haeckel (B) Mendel
(C) Lamarck (D) Weisman

108. 'Mutation Theory' for origin of new species was proposed by :

- (A) Mendel (B) Hugo De Vries
(C) Mc Clintock (D) Wallace

109. According to Wegner's Continental Drift theory until late Mesozoic Era only two continents existed, one is Gondwana, the second is :

- (A) Eurasia (B) Laurasia
(C) Polynesia (D) America

110. The following is a 'disaccharide' :

- (A) Glucose (B) Fructose
(C) Sucrose (D) Xylose

111. The following is an 'aromatic amino acid' :

- (A) Glutamine (B) Arginine
(C) Methionine (D) Tyrosine

112. The Bacterial cell wall is mainly made of:

- (A) Peptidoglycans (B) Mannans
(C) Glucomannans (D) None of these

113. The wall less bacteria are called as :

- (A) Sphaeroplasts (B) Protoplasts
(C) Viruses (D) None

114. The fungus cell wall is composed mainly of:

- (A) Glucose (B) Polysaccharides
(C) Chitin (D) Protein

115. The plant cell walls are constructed by :

- (A) Proteins (B) Cellulose
(C) Lipids (D) Lignins

116. Neighbouring plant cells are communicated through :

- (A) Plasmodesmata (B) Plasma membrane
(C) Cell wall extensions (D) None of these

117. The main function of plasma membrane is :

- (A) Regulation of movement of substances into and out of the cells
(B) Signalling
(C) To keep all the components together
(D) For communication to other cells

118. The main function of 'Mitochondria' is :

- (A) Respiration (B) Reproduction
(C) Synthesis (D) Excretion

119. The main function of 'Ribosomes' is :

- (A) Secretion (B) Osmoregulation
(C) Growth (D) Protein synthesis

120. The following cell organelle contain 'RNA' :

- (A) Chloroplast (B) Mitochondria
(C) Ribosome (D) Nucleus