

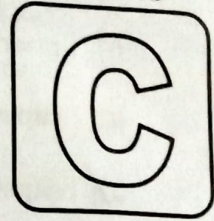
DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Test Booklet No. :

00855

TEST BOOKLET
BOTANY

Series



Full Marks : 200

Time Allowed : 2 Hours

Read the following instructions carefully before you begin to answer the questions :

1. The name of the Subject, Roll Number as mentioned in the Admission Certificate, Test Booklet No. and Series are to be written legibly and correctly in the space provided on the Answer-Sheet with Black/Blue ballpoint pen.
2. Answer-Sheet without marking Series as mentioned above in the space provided for in the Answer-Sheet shall not be evaluated.
3. All questions carry equal marks.

The Answer-Sheet should be submitted to the Invigilator.

Directions for giving the answers : Directions for answering questions have already been issued to the respective candidates in the 'Instructions for marking in the OMR Answer-Sheet' along with the Admit Card and Specimen Copy of the OMR Answer-Sheet.

Example :

Suppose the following question is asked :

The capital of Bangladesh is

- (A) Chennai
(B) London
(C) Dhaka
(D) Dhubri

You will have four alternatives in the Answer-Sheet for your response corresponding to each question of the Test Booklet as below :

(A) (B) (C) (D)

In the above illustration, if your chosen response is alternative (C), i.e., Dhaka, then the same should be marked on the Answer-Sheet by blackening the relevant circle with a Black/Blue ballpoint pen only as below :

(A) (B) (C) (D)

The example shown above is the only correct method of answering.

4. Use of eraser, blade, chemical whitener fluid to rectify any response is prohibited.
5. Please ensure that the Test Booklet has the required number of pages (16) immediately after opening the Booklet. In case any page(s) is/are missing, please report the same to the Invigilator.
6. No candidate shall be admitted to the Examination Hall/Room 20 minutes after the commencement of the examination.
7. No candidate shall leave the Examination Hall/Room without prior permission of the Supervisor/Invigilator. No candidate shall be permitted to hand over his/her Answer-Sheet and leave the Examination Hall/Room before expiry of the full time allotted for each paper.
8. No Mobile Phone, Electronic Communication Device, etc., are allowed to be carried inside the Examination Hall/Room by the candidates. Any Mobile Phone, Electronic Communication Device, etc., found in possession of the candidate inside the Examination Hall/Room, even if on off mode, shall be liable for confiscation.
9. No candidate shall have in his/her possession inside the Examination Hall/Room any book, notebook or loose paper, except his/her Admission Certificate and other connected papers permitted by the Commission.
10. Complete silence must be observed in the Examination Hall/Room. No candidate shall copy from the paper of any other candidate, or permit his/her own paper to be copied, or give, or attempt to give, or obtain, or attempt to obtain irregular assistance of any kind.
11. This Test Booklet can be carried with you after answering the questions in the prescribed Answer-Sheet.
12. Noncompliance with any of the above instructions will render a candidate liable to penalty as may be deemed fit.
13. No rough work is to be done on the OMR Answer-Sheet. You can do the rough work on the space provided in the Test Booklet.

N.B. : There will be negative marking @ 0.25 per 1 (one) mark against each wrong answer.

1. The protein coat of a virus is called
 - (A) virion
 - (B) prion
 - (C) capsule
 - (D) capsid

2. Clamp connections are found in the fungi belonging to the class
 - (A) Phycomycetes
 - (B) Ascomycetes
 - (C) Basidiomycetes
 - (D) Deuteromycetes

3. The example of fruticose lichen is
 - (A) *Graphis*
 - (B) *Usnea*
 - (C) *Rhizocarpon*
 - (D) *Parmelia*

4. The prothallus is dioecious in
 - (A) *Lycopodium*
 - (B) *Psilotum*
 - (C) *Marsilea*
 - (D) *Polypodium*

5. Which of the following phenomena is considered as the most important leading to the seed habit?
 - (A) Apospory
 - (B) Apogamy
 - (C) Homospory
 - (D) Heterospory

6. Spur is found in
 - (A) *Pinus*
 - (B) *Cycas*
 - (C) *Gnetum*
 - (D) *Ginkgo*

7. Which one of the following elements is **not** a micro-element for plants?
 - (A) Manganese
 - (B) Magnesium
 - (C) Boron
 - (D) Zinc

8. During conjugation, the genetic material is transferred through
 - (A) cell wall
 - (B) capsule
 - (C) pili
 - (D) medium

9. Aflatoxin is produced by
- (A) *Alternaria*
 - (B) *Penicillium*
 - (C) *Fusarium*
 - (D) *Aspergillus*
10. Which alga is pathogenic to human?
- (A) *Cephaleuros*
 - (B) *Ulothrix*
 - (C) *Macrocystis*
 - (D) *Prototheca*
11. Litmus is obtained from
- (A) beetroot
 - (B) bryophyte
 - (C) lichen
 - (D) turmeric
12. Tonoplast is the membrane surrounding the
- (A) cytoplasm
 - (B) vacuole
 - (C) nucleus
 - (D) mitochondria
13. Cytoplasm of one cell is connected with another cell through
- (A) plasmodesmata
 - (B) cytoplasmic strand
 - (C) torus
 - (D) pit membrane
14. Which of the following ages is regarded as the 'age of pteridophytes'?
- (A) Early Palaeozoic
 - (B) Middle Palaeozoic
 - (C) Late Palaeozoic
 - (D) Devonian
15. The 'endosperm' of a gymnosperm represents
- (A) gametophytic tissue
 - (B) sporophytic tissue
 - (C) tissue formed by double fertilization
 - (D) polyploid tissue
16. The elongated axis of flower between androecium and gynoecium is called
- (A) gynophore
 - (B) anthrophore
 - (C) androgynophore
 - (D) androphore

17. A monocarpic plant is one which

- (A) ✓ has only one carpel
- (B) has one ovule
- (C) develops only one fruit
- (D) flowers only once in its life

18. Bentham and Hooker classified dicotyledons into

- (A) Polypetalae, Gamopetalae and Monochlamydae
- (B) Polypetalae, Gamopetalae and Tubiflorae
- (C) Archichlamydae, Metachlamydae and Monochlamydae
- (D) Archichlamydae, Metachlamydae and Gamopetalae

19. Clove is

- (A) dry fruit
- (B) ✓ dry flower bud
- (C) dry seed
- (D) dry flower

20. One molecule of ATP yields

- (A) 8.5 kcal of energy
- (B) 42 kcal of energy
- (C) 7.3 kcal of energy
- (D) 8-12 kcal of energy

21. The storage material in red algae is

- (A) lipid starch
- (B) floridean starch
- (C) ✓ glycogen
- (D) special starch

22. Protonema is found in

- (A) algae
- (B) fern
- (C) moss
- (D) gymnosperms

23. Plant body of pteridophyte is

- (A) sporophyte
- (B) gametophyte
- (C) haploid
- (D) triploid

24. In epigynous flower, ovary is

- (A) superior
- (B) inferior
- (C) half inferior
- (D) obliquely placed

25. The living component of xylem is

- (A) tracheid
- (B) vessel
- (C) xylem fibre
- (D) xylem parenchyma

26. The balloon like growth of parenchyma in the lumen of a vessel is known as

- (A) phellogen
- (B) tunica
- (C) tylosis
- (D) histogen

27. Timber is

- (A) primary xylem
- (B) secondary xylem
- (C) primary phloem
- (D) secondary phloem

28. Which of the following statements is **not** included in the 'cell theory'?

- (A) Cells originate spontaneously.
- (B) Cells are the structural units of life.
- (C) Cells are the functional units of life.
- (D) Cells originate from pre-existing cells.

29. The cell organelle that takes part in protein synthesis is

- (A) lysosome
- (B) Golgi body
- (C) peroxisome
- (D) ribosome

30. If a cell is reduced in size when placed in a solution, the solution is

- (A) saturated
- (B) hypotonic
- (C) hypertonic
- (D) weak

31. Swelling of wooden door during rainy season is due to

- (A) endosmosis
- (B) imbibition
- (C) capillary action
- (D) deplasmolysis

32. The source of O_2 liberated during photosynthesis is

- (A) water
- (B) CO_2
- (C) photosynthetic enzyme
- (D) carbohydrate present in leaf

33. Cyclic photophosphorylation involves

- (A) pigment system I
- (B) pigment system II
- (C) both pigment systems I and II
- (D) pigment system III

34. The core element of chlorophyll is

- (A) Fe
- (B) Zn
- (C) Mn
- (D) Mg

35. The first step in the utilization of glucose in metabolism is

- (A) glycogen
- (B) pyruvic acid
- (C) glucose-6-phosphate
- (D) ATP

36. Which of the following enzymes is **not** used in Krebs' cycle?

- (A) Aldolase
- (B) Aconitase
- (C) Fumarase
- (D) Decarboxylase

37. RQ of respiratory substrate rich in O_2 is

- (A) more than one
- (B) equal to one
- (C) less than one
- (D) zero

38. Which one is 'energy currency' of living organisms?

- (A) FAD
- (B) NADP
- (C) ATP
- (D) Chlorophyll

39. 'Red Data Book' includes the names of important species of flora and fauna which have now become

- (A) morphologically peculiar
- (B) exotic
- (C) endangered
- (D) out of danger

40. The process of removing stamens from the flower bud during hybridization is called

- (A) crossing
- (B) emasculation
- (C) capping
- (D) tagging

41. Facultative saprophyte is

- (A) a parasite but can live saprophytically
- (B) always parasite
- (C) always saprophyte
- (D) both saprophyte and autotroph

42. Linked genes are separated by

- (A) mutation
- (B) crossing-over
- (C) euploidy
- (D) chromosomal doubling

43. *Datura* is a classic example of

- (A) monoploid
- (B) triploid
- (C) monosomy
- (D) trisomy

44. The smallest segment of genetic material which can undergo mutation is called

- (A) recon
- (B) muton
- (C) cistron
- (D) interferon

45. Why is it difficult for most plants to carry out photosynthesis in very hot and dry environment such as deserts?

- (A) The light is too intense and overpowers pigment molecules
- (B) The greenhouse effect is intensified in a desert environment
- (C) CO_2 builds up in the leaves, blocking carbon fixation
- (D) The closing of stomata keeps CO_2 from entering and O_2 from leaving the plant

46. Which one of the following is a green manure?

- (A) Rice
- (B) Maize
- (C) Sorghum
- (D) *Sesbania*

47. Heartwood is

- (A) physically dead but physiologically functional
- (B) physically as well as physiologically active
- (C) physically as well as physiologically dead
- (D) only physiologically dead but physically active

48. Which one of the following hormones is **not** a growth inhibitor?

- (A) IAA
- (B) Dormin
- (C) Abscisic acid
- (D) Ethylene

49. A widely used rooting hormone is

- (A) 2, 4-D
- (B) NAA
- (C) 2, 4, 5-T
- (D) cytokinin

50. Which of the following is **not** a function of auxin?

- (A) Inducing dormancy
- (B) Inducing callus formation
- (C) Enhancing cell division
- (D) Maintaining apical dominance

51. Who proposed the 'Mutation Theory' of evolution?

- (A) Darwin
- (B) Wallace
- (C) De Vries
- (D) Malthus

52. Transgenic crops developed to tolerate herbicides are

- (A) tomato and rice
- (B) rice and wheat
- (C) maize and sugarcane
- (D) tomato and tobacco

53. One of the chief sources of alginic acid is
- (A) *Spirulina*
 - (B) *Laminaria*
 - (C) *Gelidium*
 - (D) *Cladophora*
54. The thallus of *Ulva* is
- (A) foliaceous filament
 - (B) heterotrichous filament
 - (C) branched filament
 - (D) motile colonial thallus
55. The term 'taxonomy' was first coined by
- (A) Carolus Linnaeus
 - (B) Armen Takhtajan
 - (C) Bentham and Hooker
 - (D) A. P. de Candolle
56. Nyctinastic movement is found in
- (A) *Mimosa pudica*
 - (B) *Drosera burmannii*
 - (C) *Samanea saman*
 - (D) *Ixora coccinea*
57. Tetradynamous stamens are found in the family
- (A) Solanaceae
 - (B) Brassicaceae
 - (C) Lamiaceae
 - (D) Asteraceae
58. *Adiantum* is commonly known as
- (A) water fern
 - (B) walking fern
 - (C) golden fern
 - (D) silver fern
59. The edible part of elephant apple (*Dillenia indica*) is
- (A) calyx
 - (B) corolla
 - (C) both calyx and corolla
 - (D) thalamus
60. Tunica Corpus theory was proposed by
- (A) Foster
 - (B) Schuepp
 - (C) Hofmeister
 - (D) Schmidt

61. Enation theory is associated with the development of
- (A) stem
 - (B) flower
 - (C) leaf
 - (D) root
62. Citrus canker is a
- (A) viral disease
 - (B) fungal disease
 - (C) bacterial disease
 - (D) deficiency symptom
63. Leaf gaps are present in
- (A) solenostele
 - (B) protostele
 - (C) plectostele
 - (D) siphonostele
64. Pavement tissue is found in
- (A) *Cycas*
 - (B) *Pinus*
 - (C) *Gnetum*
 - (B) *Ginkgo*
65. Egg apparatus consists of
- (A) egg with antipodals and synergids
 - (B) egg and secondary nucleus
 - (C) egg with two antipodals
 - (D) egg with two synergids
66. If anther and stigma in a bisexual flower mature at different time, it is known as
- (A) heterostyly
 - (B) dichogamy
 - (C) dieciny
 - (D) herkogamy
67. Plumule develops into
- (A) root
 - (B) shoot
 - (C) flower
 - (D) leaf
68. In which stage, chromosomes become visible?
- (A) Prophase
 - (B) Metaphase
 - (C) Anaphase
 - (D) Telophase

69. Granum is a component of

- (A) ribosome
- (B) mitochondria
- (C) chloroplast
- (D) endoplasmic reticulum

70. Which of the following is **not** associated to Lamarck's theory?

- (A) Survival of the fittest
- (B) Change through use and disuse
- (C) Inheritance of acquired characters
- (D) Organisms driven to greater complexity

71. How many spores will be produced from 25 spore mother cells?

- (A) 50
- (B) 75
- (C) 100
- (D) 150

72. Which one of the following is **not** a C_4 plant?

- (A) Corn
- (B) Sorghum
- (C) Sugarcane
- (D) Barley

73. The end product of glycolysis is

- (A) glucose
- (B) pyruvic acid
- (C) 3-phosphoglyceric acid
- (D) starch

74. The transition area between two biomes is referred as

- (A) climax
- (B) ecotone
- (C) sere
- (D) ecesis

75. Biological formation of nitrate and nitrite from ammonia is called

- (A) ammonification
- (B) nitrification
- (C) nitrogen assimilation
- (D) nitritefication

76. Phyllode is an adaptive structure found in

- (A) *Acacia*
- (B) *Opuntia*
- (C) *Asparagus*
- (D) *Allium*

77. Edaphic factors refer to
- (A) water
 - (B) atmosphere
 - (C) soil
 - (D) moisture
78. The pathogen of 'early blight of potato' is
- (A) *Phytophthora infestans*
 - (B) *Rhizoctonia solani*
 - (C) *Xanthomonas citri*
 - (D) *Alternaria solani*
79. The phenomenon of photoperiodism was discovered by
- (A) Lysenko
 - (B) Brian
 - (C) Garner and Allard
 - (D) Klippart
80. The type of waxy substance present outside the leaf epidermis is
- (A) lignin
 - (B) cutin
 - (C) suberin
 - (D) cellulose
81. Presence of pappus is a characteristic feature of the family
- (A) Asteraceae
 - (B) Malvaceae
 - (C) Polygonaceae
 - (D) Acanthaceae
82. Epiblema is present in
- (A) leaf
 - (B) stem
 - (C) root
 - (D) embryo
83. The study of the age of a plant is known as
- (A) Phenology
 - (B) Pomology
 - (C) Anthology
 - (D) Dendrochronology
84. Essential oils are
- (A) aromatic
 - (B) non-aromatic
 - (C) non-volatile
 - (D) non-hydrophobic

85. In hypanthodium inflorescence, the flowers are
- (A) bisexual
 - (B) unisexual
 - (C) neuter
 - (D) hermaphrodite
86. The best known natural system of classification was published in
- (A) *Species Plantarum*
 - (B) *The Families of Flowering Plants*
 - (C) *Genera Plantarum*
 - (D) *Flowering Plants—Origin and Dispersal*
87. Rostellum is found in the family
- (A) Orchidaceae
 - (B) Poaceae
 - (C) Magnoliaceae
 - (D) Cyperaceae
88. Which type of fruit is pineapple?
- (A) Hesperidium
 - (B) Syconus
 - (C) Fleshy drupe
 - (D) Sorosis
89. Aerenchyma is a characteristic tissue generally found in
- (A) epiphytes
 - (B) hydrophytes
 - (C) xerophytes
 - (D) lithophytes
90. Integument is absent in
- (A) saprophytic angiosperms
 - (B) halophytic angiosperms
 - (C) parasitic angiosperms
 - (D) epiphytic angiosperms
91. Verticillaster inflorescence is found in the family
- (A) Lamiaceae
 - (B) Apocynaceae
 - (C) Euphorbiaceae
 - (D) Ranunculaceae
92. The alternate name of female gametophyte is
- (A) endosperm
 - (B) secondary nucleus
 - (C) egg apparatus
 - (D) embryo sac

93. OTU is associated with
- (A) biosystematics
 - (B) chemotaxonomy
 - (C) numerical taxonomy
 - (D) molecular taxonomy
94. The main function of velamen is to
- (A) absorb
 - (B) minerals
 - (C) moisture
 - (D) carbon dioxide
95. Tapetum is formed during the process of
- (A) microsporogenesis
 - (B) microgametogenesis
 - (C) megasporogenesis
 - (D) megagametogenesis
96. Which of the following is the State tree of Assam?
- (A) *Shorea robusta*
 - (B) *Dipterocarpus macrocarpus*
 - (C) *Ficus benghalensis*
 - (D) *Tectona grandis*
97. Monocot stem anatomy is characterized by the
- (A) presence of scattered vascular bundle
 - (B) presence of closed vascular bundle
 - (C) absence of pith
 - (D) All of the above
98. In some fungi, the hyphae fused to each other forming a rope-like structure and running parallel to each other is known as
- (A) sclerotia
 - (B) rhizomorpha
 - (C) stroma
 - (D) plectenchyma
99. Prokaryotes are characterized by
- (A) 50S ribosomes
 - (B) 60S ribosomes
 - (C) 70S ribosomes
 - (D) 80S ribosomes
100. Motile unicellular thallus is found in
- (A) *Euglena*
 - (B) *Gloeoecapsa*
 - (C) *Chlorella*
 - (D) *Anabaena*