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TEST BOOKLET

Sl. No. -

01460

Subject Code : 03

Subject : Botany

LECTURERS FOR NON-GOVT. AIDED COLLEGES OF ODISHA

Time Allowed : 3 Hours

Maximum Marks : 165

: INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET CONTAINS 24 PAGES AND DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
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. The Test Booklet contains **165** questions. Each question comprises four answers. You have to select the correct answer which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct answer, you should mark (darken) the answer which you consider the best. In any case choose **ONLY ONE** answer for each question. If more than one answer is darkened it will be considered as wrong.
4. You have to mark (darken) all your answers **ONLY** on the **separate OMR Answer Sheet** provided, by using **BLACK BALL POINT PEN**. You have to do rough work on the space provided in the Test Booklet only. See instruction in the Answer Sheet.
5. All questions carry equal marks, i.e. of one mark for each correct answer and each wrong answer will result in negative marking of **0.25** mark.
6. Before you proceed to mark (darken) in the Answer Sheet the answers to various questions in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions in your Admit Card.
7. After you have completed filling in all your answers on the Answer Sheet and after completion of the examination, you should hand over to the Invigilator the **Original Answer Sheet (OMR 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.

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SEAL

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Candidate's full signature

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Invigilator's signature

RS - 21/25

(Turn over)

2018

1. Members of Thallophyta do not have the following character :
 - (A) Plant body is not differentiated into root, leaf and stem
 - (B) Zygote generally develop into a multicellular embryo
 - (C) Reproduction occurs through vegetative, sexual and asexual means
 - (D) Reproductive organs are mostly unicellular

2. Aplanogametes are characterized by their :
 - (A) Having flagella
 - (B) Different size
 - (C) Non-motility
 - (D) Involvement in asexual reproduction

3. Floridian starch is the storage carbohydrate in :
 - (A) Phaeophyceae
 - (B) Rhodophyceae
 - (C) Charophyceare
 - (D) Cyanophyceae

4. Pyrenoids are specialized bodies made up of :
 - (A) Protein surrounded by starch plates
 - (B) Starch plates surrounded by Protein
 - (C) Protein sorrounded by lipid granules
 - (D) Lipid granules surrounded by starch plates

5. The type of lifecycle found in **Polysiphonia** is :
 - (A) Haplobiontic
 - (B) Diplohaplontic
 - (C) Diplontic
 - (D) Haplodiplobiontic

6. Thallus organization in **Chlamydomonas** is of :
 - (A) Palmelloid type
 - (B) Dendroid type
 - (C) Siphonaceous type
 - (D) Heterotrichous type

7. Japanese food 'Kombu' is prepared from :
 - (A) **Caulerpa**
 - (B) **Ulva**
 - (C) **Porphyra**
 - (D) **Laminaria**

8. Chantransia stage is found in :
 - (A) **Batrachospermum**
 - (B) **Polysiphonia**
 - (C) **Oedogonium**
 - (D) **Fucus**

9. Which of the following is not a character of Fungi ?
- (A) Devoid of Chlorophyll
(B) Heterotrophic
(C) Prokaryotic
(D) Cell wall made up of chitin
10. Hyphal modification that resembles that of a root tip is called :
- (A) Plectenchyma
(B) Sclerotia
(C) Stroma
(D) Rhizomorph
11. During sexual reproduction in fungi dikaryon formation occurs :
- (A) Before plasmogamy
(B) After plasmogamy
(C) During karyogamy
(D) After karyogamy
12. 'Ergots' used as a source of medicine contain a number of :
- (A) Alkaloids
(B) Organic acids
(C) Phenolics
(D) Amino acids
13. Which one of the following is considered as a form-class of Fungi ?
- (A) Phycomycetes
(B) Ascomycetes
(C) Basidiomycetes
(D) Deuteromycetes
14. Gametangium often develop directly into a thick-walled structure called :
- (A) Zygosporangium
(B) Azygosporangium
(C) Planospore
(D) Oospore
15. **Aspergillus** produces a highly toxic substance known as :
- (A) Aflatoxin
(B) Phylotoxin
(C) Amanitine
(D) Phytoalexin
16. In **Puccinia** which spore form is not produced in definite sori ?
- (A) Pycniospore
(B) Aeciospores
(C) Teleutospore
(D) Basidiospore
17. Griseofulvin produced by a species of **Penicillium** is :
- (A) Antibacterial
(B) Antifungal
(C) Antiviral
(D) Antiprotozoan

18. Causal organism for the disease 'Late blight of potato' is :
- (A) **Alternaria solani**
 (B) **Pythium debaryanum**
 (C) **Fusarium udum**
 (D) **Phytophthora infestans**
19. Citrus canker is a disease caused by
- (A) Virus
 (B) Bacteria
 (C) Fungi
 (D) Insect
20. When a fungal pathogen produces different spore forms on different hosts, it is called :
- (A) Macrocytic
 (B) Heteroecious
 (C) Polymorphic
 (D) Dioecious
21. Double stranded RNA is found in :
- (A) Polio virus
 (B) TMV
 (C) Herpes virus
 (D) Reovirus
22. Which of the following is not true regarding capsid of viruses ?
- (A) It is made up of lipo-protein
 (B) It protects nucleic acid from adverse environmental conditions
 (C) It facilitates nucleic acid entry into host cells
 (D) It helps in synthesis of nucleic acid and proteins during growth cycle in host cells
23. In case of T-even phages the number of tail fibers usually is :
- (A) 4
 (B) 6
 (C) 8
 (D) 10
24. When viral genome of a phage integrates with bacterial genome, it is called :
- (A) Prophage
 (B) Prephage
 (C) Temperate phage
 (D) Lytic phage
25. Example of non-enveloped virus is :
- (A) Influenza virus
 (B) Herpes virus
 (C) Pox virus
 (D) Adenoviruses

26. Group of bacteria having resemblance with fungus is :
- (A) Myxobacteria
(B) Actinomycetes
(C) Chlamydobacteria
(D) Cyanobacteria
27. Which of the following bacteria is not water borne ?
- (A) **Salmonella typhosa**
(B) **Vibrio comma**
(C) **Shigella dysenterica**
(D) **Streptococcus laciis**
28. Example of chemosynthetic bacteria is :
- (A) **Rhodospirillum**
(B) **Clostridium**
(C) **Chlorobium**
(D) **Rhodopseudomonas**
29. The small circular bacterial DNA that attach to the chromosomes are called :
- (A) Plasmids
(B) Desmids
(C) Cosmids
(D) Episomes
30. Bacterial cells divide steadily at a constant rate at :
- (A) Acceleration phase
(B) Exponential phase
(C) Deceleration phase
(D) Stationary phase
31. Cyanophycean algae are considered as bacteria because :
- (A) Sexual reproduction is lacking
(B) Motile gametes are absent
(C) True nucleus is absent
(D) Filamentous plant body
32. Which of the following occurs as endophyte within the thallus of liverworts ?
- (A) **Oscillatoria**
(B) **Nostoc**
(C) **Spirullina**
(D) **Anabaena**
33. Heterocysts found in cyanobacteria are functionally associated with :
- (A) Reproduction
(B) Movement
(C) Sensing environment
(D) Nitrogen metabolism

34. Regarding characterization of bryophytes which of the following is not true ?
- (A) Heteromorphic alternation of generations
 - (B) Gametophyte is dependent on sporophyte
 - (C) True roots are absent
 - (D) Sexual reproduction is oogamous
35. In case of Hepatics :
- (A) Sporogenous tissue derives from amphithecium
 - (B) Sporogenous tissue derives from endothecium
 - (C) Sporogenous tissue derives either from amphithecium or from endothecium
 - (D) Sporogenous tissue derives neither from amphithecium nor from endothecium
36. Characteristically bryophytes belong to :
- (A) Archegoniatae
 - (B) Tracheophyta
 - (C) Embryophyta
 - (D) Spermatophyte
37. That Bryophytes have originated directly from **Chara** has been postulated by :
- (A) Church
 - (B) Campbell
 - (C) Frye and Clark
 - (D) Smith
38. Sporophyte is devoid of foot and seta in :
- (A) **Riccia**
 - (B) **Marchantia**
 - (C) **Anthoceros**
 - (D) **Sphagnum**
39. Which of the following is not true for considering **Anthoceros** sporophyte as advance ?
- (A) Beginning of independence of sporophyte
 - (B) Development of localized sporangia
 - (C) Development of columella
 - (D) Fully fertile sporogenous tissue
40. Which is not a common name of **Sphagnum** ?
- (A) Bog moss
 - (B) Rock moss
 - (C) Peat moss
 - (D) Turf moss

41. Elaters found in the **Marchantia** capsule play a role in :
- (A) Protection of spores
 - (B) Scattering of spores
 - (C) Formation of spores
 - (D) Nutrition of spores
42. Mature sporophyte is completely embedded within the gametophyte in :
- (A) **Riccia**
 - (B) **Marchantia**
 - (C) **Anthoceros**
 - (D) **Sphagnum**
43. In case of **Marchantia** gemmae formation is related to :
- (A) Sexual reproduction
 - (B) Asexual reproduction
 - (C) Vegetative production
 - (D) Sporophyte formation
44. Gametophytic thallus of **Anthoceros** inhabit endophytic colonies of :
- (A) **Anabaena**
 - (B) **Oscillatoria**
 - (C) **Gleocapsa**
 - (D) **Nostoc**
45. Regarding Pteridophytes which of the following is not true? (8)
- (A) Plant body differentiated into root, stem and leaf
 - (B) Stems and roots have apical growth
 - (C) Roots can grow indefinitely
 - (D) No conducting tissues are present
46. Rootless sporophyte with branches having sporangia borne singly at the tips is a characteristic feature of the division :
- (A) **Psilophyta**
 - (B) Lepidophyta
 - (C) Calamophyta
 - (D) Pterophyta
47. Fritsch (1945) proposed the origin of pteridophytes from :
- (A) Chactophoraceous type of filamentous green algae
 - (B) Brown algae
 - (C) Not any particular section of algae
 - (D) Thallose bryophyte
48. Telome theory regarding evolution of vascular plants was proposed by :
- (A) Bower
 - (B) Lignier
 - (C) Zimmermann
 - (D) Campbell

49. Which of the following are only two living members of the division Psilophyta ?
- Rhynia and Psilotum
 - Psilotum and Tmesipteris
 - Tmesipteris and Psilophyton
 - Psilophyton and Psilotum
50. Club moss is a common name of :
- Lycopodium
 - Selaginella
 - Equisetum
 - Marsilea
51. Within sporangial jacket sporogenous tissue is surrounded by a nutritive layer known as :
- Perisperm
 - Endosperm
 - Tapetum
 - Tigellum
52. In **Isoetes** fertile cells of sporogenous tissue are separated by plates of sterile cells called :
- Tuberculae
 - Trabeculae
 - Velum
 - Prismatic layer
53. Incipient heterospory is found in the genus :
- Lycopodium
 - Selaginella
 - Equisetum
 - Marsilea
54. Stem of **Marsilea** is characterized by :
- Protostele
 - Plectostele
 - Actinostele
 - Amphipholic siphonostele
55. **Equisetum** is commonly known as :
- Fishtail
 - Birdtail
 - Horsetail
 - Ponytail
56. In Gymnospermae tracheae are absent except in :
- Gnetum
 - Cycas
 - Pinus
 - Ginkgo
57. Chilgoza is the common name of :
- Pinus roxburghii
 - Pinus insularis
 - Pinus gerardiana
 - Pinus succinifera

58. Coralloid roots of **Cycas** harbour the species of :
- (A) **Nostoc**
 (B) **Anabaena**
 (C) **Oscillatoria**
 (D) **Gleocapsa**
59. Some phloem parenchyma cells known as albuminous cells are present in the leaves of :
- (A) **Gnetum**
 (B) **Cycas**
 (C) **Pinus**
 (D) **Ginkgo**
60. Which of the following character is not resembling with ferns ?
- (A) Circinate vernation of leaflets
 (B) Presence of archegonia in female gametophyte
 (C) Absence of true vessels
 (D) Formation of seeds
61. Perisperm, a layer nutritive tissue, is remnant of :
- (A) Endosperm
 (B) Nucellus
 (C) Seed coat
 (D) Suspensor
62. Majority of **Gnetum** species are :
- (A) Herbs
 (B) Shrubs
 (C) Trees
 (D) Woody climbers
63. The cells of endosperm in case of Gymnosperms are :
- (A) Haploid
 (B) Diploid
 (C) Triploid
 (D) Tetraploid
64. The leaf lamina of the form genus **Lyginopteris** is named as :
- (A) **Sphenopteris**
 (B) **Rachiopteris**
 (C) **Kaloxylon**
 (D) **Lagenostoma**
65. Inflorescence of Cycadeoidea resembles the flower of :
- (A) **Michelia**
 (B) **Magnolia**
 (C) **Malus**
 (D) **Annona**
66. Plant fossils having both external form and internal structure preserved are known as :
- (A) Petrification
 (B) Impression
 (C) Compression
 (D) Incrustation

67. Lateral roots develop from :
- Epidermis
 - Hypodermis
 - Endodermis
 - Pericycle
68. Root caps are absent in :
- Aerial plants
 - Aquatic plants
 - Parasitic plants
 - Epiphytic plants
69. Radish is an example of modified root belonging to type :
- Fusiform
 - Conical
 - Napiform
 - Tubercular
70. Tendril of **Smilax** sp. is modification of :
- Entire leaf
 - Apex of leaf
 - Stipule
 - Inflorescence axis
71. Bracts developing at the base of flowers are also known as :
- Sporophylls
 - Hypsophylls
 - Cataphylls
 - Prophylls
72. One of the salient features of Polygonaceae is :
- Adnate stipules
 - Ochreate stipules
 - Interpetiolar stipules
 - Intrapetiolar stipules
73. Compound leaves of **Tamarindus indica** belong to the category :
- Unipinnate
 - Bipinnate
 - Paripinnate
 - Imparipinnate
74. In spikelet inflorescence perianth represented by small membranous structures known as :
- Glumes
 - Palea
 - Lemmas
 - Lodicules
75. Gynostegium is an example of adnation between :
- Carpels and stamens
 - Carpels and corolla
 - Stamens and corolla
 - Carpels and perianth

76. Fruits of *Acacia* sp. that break up into bits upon maturity are called :
- Carcerule
 - Regma
 - Lomentum
 - Cremocarp
77. One of the diagnostic characters of Poaceae is the presence of ligules present :
- At the base of flower
 - At the junction of leaf-sheath and blade
 - At the base of roots
 - At the tip of leaves
78. ***Arabidopsis thaliana***, the most popular model plant, belongs to the family :
- Fabaceae
 - Malvaceae
 - Asteraceae
 - Cruciferae
79. Papilionoideae, a subfamily of Fabaceae is characterized by :
- Valvate aestivation
 - Imbricate aestivation
 - Vexillary aestivation
 - Quincuncial aestivation
80. Malvaceae can be distinguished from its allied families, Tiliaceae and Sterculiaceae by :
- One-lobed reniform anthers
 - Capsular fruits
 - Actinomorphic flowers
 - Monadelphous stamens
81. Capitulum inflorescence is a characteristic feature of family :
- Lamiaceae
 - Asteraceae
 - Malvaceae
 - Asclepiadaceae
82. System of classification of organisms based on few superficial characters is known as :
- Natural system
 - Artificial system
 - Synthetic system
 - Phylogenetic system
83. For author citation when a name is proposed by one author but published later by another author, name of the latter author is cited after the name of first author :
- Followed by 'in'
 - Followed by 'ex'
 - Followed by 'emend'
 - Within parentheses

84. Histogen theory regarding origin of meristems was proposed by :
- (A) Hofmeister (1857)
 (B) Nageli (1878)
 (C) Hanstein (1868)
 (D) Schmidt (1924)
85. Vascular bundles are open bicollateral in case of :
- (A) Sunflower
 (B) Gourd
 (C) Maize
 (D) Wheat
86. As characteristic anomalous structure, inverted vascular bundles are found in :
- (A) **Boerhaavia** sp.
 (B) **Nyctanthus** sp.
 (C) **Bauhinia** sp.
 (D) **Mirabilis** sp.
87. Which of the following is not true regarding collenchymas tissue ?
- (A) These are extensible with a considerable degree of plasticity
 (B) These may contain chloroplast
 (C) These have unevenly thickened cellulosic walls
 (D) Cell wall contains lignins
88. The role of tapetum is :
- (A) To provide nutrition to the sporogenous tissue
 (B) To protect sporogenous tissue
 (C) To help in the development of microspore mother cell
 (D) To help in the development of microspore wall
89. Pollinium is found in the family
- (A) Fabaceae
 (B) Orchidaceae
 (C) Liliaceae
 (D) Onagraceae
90. Monosporic type of megaspore development found in :
- (A) **Allium** sp.
 (B) **Fritillaria** sp.
 (C) **Polygonum** sp.
 (D) **Peperomia** sp.
91. Inner integument is finally develop into :
- (A) Testa
 (B) Tegmen
 (C) Seed
 (D) Pericarp

92. Polysiphonous pollen tube is observed in the family :
- (A) Poaceae
(B) Fabaceae
(C) Malvaceae
(D) Asclepiadaceae
93. When the pollen tube enter into the ovule through funiculus or the integument, the method is called :
- (A) Porogamy
(B) Chalazogamy
(C) Mesogamy
(D) Syngamy
94. Triple fusion occur between
- (A) Male and female gamete
(B) Male gamete and definitive nucleus
(C) Male gamete and synergid
(D) Male gamete and antipodal cell
95. The role of suspensor is :
- (A) To provide nutrition to the embryo
(B) To provide mechanical support to the embryo
(C) To push the developing embryo into the endosperm
(D) To develop the cotyledons of the embryo
96. The endosperm of gymnosperms is :
- (A) Haploid
(B) Diploid
(C) Triploid
(D) Tetraploid
97. Which of the following is an example of exalbuminous seed ?
- (A) Wheat
(B) Rice
(C) Maize
(D) Ground nut
98. Apogamy is defined as development of embryo :
- (A) From any cell except the egg of the gametophyte
(B) From nucellar tissue or integuments
(C) From the haploid egg cell without fertilization
(D) From sporophytic cell without fertilization
99. Helobial type of endosperm is found in :
- (A) **Mangifera**
(B) **Calotropis**
(C) **Peperomia**
(D) **Vallisneria**

100. The protein part of a complete catalytically active enzyme is called :
- (A) Prosthetic group
 - (B) Apoenzyme
 - (C) Holoenzyme
 - (D) Coenzyme
101. E. C. number of an enzyme is composed of :
- (A) Three parts
 - (B) Five parts
 - (C) Four parts
 - (D) Two parts
102. K_m (Michaelis constant) is defined as :
- (A) Substrate concentration at which initial velocity is one half of maximum velocity
 - (B) Maximum velocity
 - (C) Initial velocity
 - (D) Substrate concentration
103. Allosteric modulator binds with :
- (A) Substrate
 - (B) Enzyme
 - (C) The regulatory site of the enzyme
 - (D) Enzyme substrate complex
104. Net yield of ATP molecules (direct and indirect) during glycolysis of one molecule of glucose under aerobic condition is :
- (A) Seven
 - (B) Four
 - (C) Six
 - (D) Five
105. Which of the following TCA cycle enzyme involves substrate channeling ?
- (A) Pyruvate dehydrogenase
 - (B) Citrate synthase
 - (C) Isocitrate dehydrogenase
 - (D) Succinate dehydrogenase
106. How many protons (H^+) are required to pass through ATP synthase enzyme to produce one molecule of ATP in mitochondrial matrix ?
- (A) Two
 - (B) Four
 - (C) Five
 - (D) Three

107. In which of the following organelles serine is produced during photorespiration ?
- (A) Chloroplast
 - (B) Peroxisome
 - (C) Mitochondria
 - (D) Golgi body
108. Which one of the following compounds is the first stable product of biological nitrogen fixation ?
- (A) Ammonium ion
 - (B) Molecular nitrogen
 - (C) Nitrate
 - (D) Nitrite
109. Which one of the following enzymes is the first enzyme of the nitrate (NO_3) assimilation process ?
- (A) Nitrate reductase
 - (B) Nitrite reductase
 - (C) Glutamine synthase
 - (D) Glutamate dehydrogenase
110. What is the subcellular location of the enzyme nitrite reductase in plants ?
- (A) Cytosol
 - (B) Chloroplast
 - (C) Mitochondria
 - (D) Peroxisome
111. During the process of ammonium assimilation the enzyme glutamate synthase (GOGAT) catalyzes the transfer of the amide group from:
- (A) Glutamate to glutamine
 - (B) Glutamate to 2-oxoglutarate
 - (C) Glutamine to 2-oxoglutarate
 - (D) Glutamine to aspartate
112. The main accessory pigment for photosynthesis in higher plants is:
- (A) Chlorophyll a
 - (B) Chlorophyll b
 - (C) Carotenoids
 - (D) Phycoerythrobilin
113. PS I and ATP synthase are exclusively located in:
- (A) Stroma lamellae
 - (B) Grana lamellae
 - (C) Inner chloroplast membrane
 - (D) Inter-membrane space of chloroplast

114. During photosynthetic electron transport in the inner membrane of chloroplast, protons (H^+) are transferred from :
- (A) Stroma to intermembrane space
 (B) Stroma to thylakoid lumen
 (C) Thylakoid lumen to stroma
 (D) Intermembrane space to stroma
115. Carboxylation of ribulose 1, 5-bisphosphate (RuBP) by Rubisco results in the formation of first stable compound :
- (A) 2-phosphoglycolate
 (B) 3-phosphoglycerate
 (C) Glyceraldehyde-3-phosphate
 (D) Fructose-6-phosphate
116. Which one of the following compounds is the biosynthesis precursor of IAA (auxin) ?
- (A) Tryptophan
 (B) Terpenoid
 (C) Methionine
 (D) Octopine
117. Bakanae disease of rice is caused by the excess production of the hormone :
- (A) IAA
 (B) Cytokinin
 (C) Gibberellin
 (D) Ethylene
118. Which of the following hormones is known to retard senescence process ?
- (A) Auxin
 (B) Cytokinin
 (C) Gibberellin
 (D) Abscisic acid
119. Which of the following compounds is the immediate precursor of ethylene biosynthesis ?
- (A) Methionine
 (B) S-Adenosyl methionine (Adomet)
 (C) 1-aminocyclopropane-1-carboxylic acid (ACC)
 (D) α -keto- γ -methylthiobutyric acid
120. Which of the following hormones is reported to maintain seed dormancy ?
- (A) Auxin
 (B) Gibberellin
 (C) Abscisic acid
 (D) Cytokinin

121. Imagine we have a sucrose solution of water potential (ψ_w) = -0.244 MPa and a wilted plant cell of water potential (ψ_w) = -0.732 MPa. What will happen if we place the wilted cell into the sucrose solution ?

- (A) Water will move from the sucrose solution to the cell as sucrose solution has greater water potential than that of the cell
- (B) Water will move out from the cell as sucrose solution has greater water potential than that of the cell
- (C) Water will move from the sucrose solution to the cell as sucrose solution has lower water potential than that of the cell
- (D) Water molecule will not enter at all into the cell

122. The role of P-proteins (present in phloem sap) is :

- (A) P-proteins help in phloem translocation
- (B) P-proteins are involved in sealing damaged sieve element

- (C) P-proteins have an important role during the maturation of sieve tube element
- (D) P-proteins are one of the main structural membrane proteins of companion cell

123. Which of the following cells are associated with sieve tube and help in phloem translocation ?

- (A) Phloem parenchyma
- (B) Bast fiber
- (C) Companion cell
- (D) Xylem parenchyma

124. Both transpiration and evaporation are influenced by :

- (A) CO₂ concentration
- (B) Light intensity
- (C) Humidity
- (D) Altitude

125. Edaphic factors include :

- (A) Soil conditions
- (B) Air quality
- (C) Hydrological parameters
- (D) Geographical parameters

126. Aerial roots with a spongy sheath is an example of adaptation in :

- (A) Hydrophytes
- (B) Halophytes
- (C) Xerophytes
- (D) Epiphytes

127. In an ecosystem snakes are example of :
- (A) Primary consumer
 - (B) Secondary consumer
 - (C) Tertiary consumer
 - (D) Quaternary consumer
128. Detritus food chain starts from :
- (A) Autotrophs, then pass through herbivores
 - (B) Autotrophs, then acted upon by decomposers
 - (C) Dead organic matter that acted upon by decomposers
 - (D) Dead organic matter that consumed by carnivores
129. In case of allogenic succession
- (A) Vegetation itself modifies the habitat
 - (B) Factors other than vegetation modifies the habitat
 - (C) Topographical conditions are responsible for the course of succession
 - (D) Vegetation itself influences the course of succession
130. Which of the following is not a stage of succession in xerosere ?
- (A) Lichen stage
 - (B) Moss stage
 - (C) Herbaceous stage
 - (D) Reed swamp stage
131. Which of the following is responsible for both global warming and ozone hole ?
- (A) CO_2
 - (B) NO_2
 - (C) CFCs
 - (D) CH_4
132. 'Minamata disease' results from water pollution due to industrial effluents containing :
- (A) Nickel derivatives
 - (B) Mercury derivatives
 - (C) Lead derivatives
 - (D) Cadmium derivatives
133. Which of the following linkages between glucose monomers is found in Cellobiose ?
- (A) $(1 \rightarrow 4) - \alpha - D$
 - (B) $(1 \rightarrow 3) - \alpha - D$
 - (C) $(1 \rightarrow 4) - \beta - D$
 - (D) $(1 \rightarrow 3) - \beta - D$
134. The inner and outer nuclear membranes are separated by :
- (A) Perinuclear space
 - (B) Paranuclear space
 - (C) Metanuclear space
 - (D) Supranuclear space

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

TEST BOOKLET

Sl. No. - **01460**

Subject Code : 03

Subject : Botany

LECTURERS FOR NON-GOVT. AIDED COLLEGES OF ODISHA

Time Allowed : 3 Hours

Maximum Marks : 165

: INSTRUCTIONS TO CANDIDATES :

1. **IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET CONTAINS 24 PAGES AND DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.**
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.

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3. The Test Booklet contains **165** questions. Each question comprises four answers. You have to select the correct answer which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct answer, you should mark (darken) the answer which you consider the best. In any case choose **ONLY ONE** answer for each question. If more than one answer is darkened it will be considered as wrong.
4. You have to mark (darken) all your answers **ONLY** on the **separate OMR Answer Sheet** provided, by using **BLACK BALL POINT PEN**. You have to do rough work on the space provided in the Test Booklet only. See instruction in the Answer Sheet.
5. All questions carry equal marks, i.e. of one mark for each correct answer and each wrong answer will result in negative marking of **0.25** mark.
6. Before you proceed to mark (darken) in the Answer Sheet the answers to various questions in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions in your Admit Card.
7. After you have completed filling in all your answers on the Answer Sheet and after completion of the examination, you should hand over to the Invigilator the **Original Answer Sheet (OMR 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.

SEAL

Candidate's full signature

Invigilator's signature

RS - 21/25

(Turn over)

2018

1. Members of Thallophyta do not have the following character :
 - (A) Plant body is not differentiated into root, leaf and stem
 - (B) Zygote generally develop into a multicellular embryo
 - (C) Reproduction occurs through vegetative, sexual and asexual means
 - (D) Reproductive organs are mostly unicellular

2. Aplanogametes are characterized by their :
 - (A) Having flagella
 - (B) Different size
 - (C) Non-motility
 - (D) Involvement in asexual reproduction

3. Floridian starch is the storage carbohydrate in :
 - (A) Phaeophyceae
 - (B) Rhodophyceae
 - (C) Charophyceae
 - (D) Cyanophyceae

4. Pyrenoids are specialized bodies made up of :
 - (A) Protein surrounded by starch plates
 - (B) Starch plates surrounded by Protein
 - (C) Protein surrounded by lipid granules
 - (D) Lipid granules surrounded by starch plates

5. The type of lifecycle found in **Polysiphonia** is :
 - (A) Haplobiontic
 - (B) Diplohaplontic
 - (C) Diplontic
 - (D) Haplodiplobiontic

6. Thallus organization in **Chlamydomonas** is of :
 - (A) Palmelloid type
 - (B) Dendroid type
 - (C) Siphonaceous type
 - (D) Heterotrichous type

7. Japanese food 'Kombu' is prepared from :
 - (A) **Caulerpa**
 - (B) **Ulva**
 - (C) **Porphyra**
 - (D) **Laminaria**

8. Chytridia stage is found in :
 - (A) **Batrachospermum**
 - (B) **Polysiphonia**
 - (C) **Oedogonium**
 - (D) **Fucus**

135. Which of the following histones is not associated with Eukaryotic Nucleosome ?
- (A) H2A
(B) H2B
(C) H4
(D) H6
136. Crossing-over occurs during :
- (A) Leptotene stage
(B) Zygotene stage
(C) Pachytene stage
(D) Diplotene stage
137. Genome size of **Arabidopsis thaliana** is around :
- (A) 75 Mb
(B) 125 Mb
(C) 175 Mb
(D) 225 Mb
138. What is the function of the enzyme Telomerase ?
- (A) Addition of telomere repeats to the chromosome ends
(B) Removal of telomere repeats from the chromosome ends
(C) Removal of telomere repeats non-selectively from the entire chromosome
(D) Addition of telomere repeats non-selectively to the entire chromosome
139. Which of the following genes of **lac operon** of **E. coli** codes for Lactose permease enzyme ?
- (A) **lac A**
(B) **lac B**
(C) **lac Y**
(D) **lac z**
140. Which of the following statements is TRUE ?
- (A) A paracentric inversion includes the centromere
(B) A paracentric inversion results into deletion of the centromere
(C) A pericentric inversion includes the centromere
(D) A pericentric inversion does not include the centromere
141. The number of base pairs per 360° turn of the helix in Z-DNA form is :
- (A) 14
(B) 12
(C) 10
(D) 8
142. The correct amino acid is attached to the tRNA by the enzyme :
- (A) Aminoacyl-tRNA synthase
(B) Aminoacyl-tRNA synthetase
(C) Aminoacetyl-tRNA synthetase
(D) Aminoacyl-tRNA synthase

143. During translation in prokaryotes, the modified form of initiator methionine is :
- (A) Hydroxymethionine
 - (B) Acetylmethionine
 - (C) Formylmethionine
 - (D) Butylmethionine
144. The process of separation of DNA fragments, blotting and hybridization with complementary probe is known as :
- (A) Western blot analysis
 - (B) Eastern blot analysis
 - (C) Northern blot analysis
 - (D) Southern blot analysis
145. In which type of mutation does an alteration in the base-pair in the DNA change the mRNA codon for an amino acid to a stop codon ?
- (A) Silent mutation
 - (B) Nonsense mutation
 - (C) Missense mutation
 - (D) Neutral mutation
146. In its normal state, 5-bromouracil (5BU) pairs with :
- (A) Adenine
 - (B) Thymine
 - (C) Guanine
 - (D) Cytosine
147. Kinetochores are the attachment sites of chromosomes to :
- (A) Spindle microtubules
 - (B) Actin filaments
 - (C) Monomeric sugars
 - (D) Lipids
148. "Inhibitory factor" is such a gene which itself :
- (A) Has phenotypic effect and masks the expression of other non-allelic genes
 - (B) Has phenotypic effect and complements the expression of other non-allelic genes
 - (C) Does not have phenotypic effect but prevents the expression of other non-allelic genes
 - (D) Does not have phenotypic effect but facilitates the expression of other non-allelic genes
149. Which of the following chemical agents is NOT used to induce protoplast fusion ?
- (A) Sodium nitrate
 - (B) Polyethylene glycol
 - (C) Sodium ortho-vanadate
 - (D) Ca^{+2} ions

150. Homozygous diploid plants can be obtained by treating homozygous haploid culture with :
- Colchicine
 - Xylenol
 - Xylene
 - Sodium hypochlorite
151. A dideoxynucleotide (ddNTP) differs from a deoxynucleotide (dNTP) in that it has a :
- 3' – OH on the deoxyribose sugar
 - 2' – H on the deoxyribose sugar
 - 4' – OH on the deoxyribose sugar
 - 3' – H on the deoxyribose sugar
152. Which of the following statements is TRUE ?
- RNA polymerase I catalyzes the synthesis of tRNAs.
 - RNA polymerase II catalyzes the synthesis of mRNAs.
 - RNA polymerase I catalyzes the synthesis of mRNAs.
 - RNA polymerase II catalyzes the synthesis of tRNAs.
153. "Emasculation" refers to the :
- Removal of ovary from the flower
 - Removal of style from the flower
 - Removal of stigma from the flower
 - Removal of stamen from the flower
154. **Hevea brasiliensis** belongs to the family :
- Brassicaceae
 - Euphorbiaceae
 - Moraceae
 - Apocynaceae
155. Which one of the following is a pulse crop belonging to the family Leguminosae ?
- Vigna radiata**
 - Anacardium occidentale**
 - Linum usitatissimum**
 - Cannabis sativa**
156. Botanical name of jute plant is :
- Çrotalaria juncea**
 - Cocos nucifera**
 - Corchorus capsularis**
 - Castilla elastica**

157. Plant part used for extraction of Reserpine from **Rauvolfia serpentina** is :
- (A) Root
(B) Stem
(C) Matured leaves
(D) Ripened seeds
158. The commercial jute fibres are obtained from :
- (A) Primary xylem
(B) Secondary xylem
(C) Secondary phloem
(D) Cortex
159. Which of the following statements is NOT true ?
- (A) Sympatric speciation occurs without geographical isolation
(B) Allopatric speciation involves geographical separation
(C) Allopatric speciation is initiated between populations
(D) Sympatric speciation does not occur between sister species
160. Which of the following types of natural selection favours intense distribution of phenotype and establishes multiple optima for the phenotype within a population ?
- (A) Stabilizing selection
(B) Disruptive selection
(C) Directional selection
(D) Group selection
161. Which of the following gases was NOT part of the gaseous mixture used by Stanley Miller during his experiments on synthesis of organic compounds by electrical discharge ?
- (A) Methane
(B) Ammonia
(C) Hydrogen
(D) Carbon dioxide
162. The Pennsylvanian Epoch is a subdivision of the Period :
- (A) Carboniferous
(B) Permian
(C) Cretaceous
(D) Cambrian

163. Which of the following character is NOT true about **Agrobacterium tumefaciens** ?

- (A) Its normal host range comprises of dicotyledonous plants
- (B) It is a gram-positive bacterium
- (C) It is rod shaped
- (D) It is a soil-dwelling bacterium

164. Excision and production of single stranded T-DNA (ss-T-DNA) is catalyzed by :

- (A) vir A
- (B) vir B
- (C) vir D
- (D) vir G

165. **Cinchona calisaya** is the source of :

- (A) Ephedrine
- (B) Quinine
- (C) Strychnine
- (D) Digitoxin



SPACE FOR ROUGH WORK

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