

**DEPARTMENT OF BOTANY
LUMAMI-798627**

Question Booklet for Online M.Sc. Admission Entrance Test -2021

Instructions to Candidates

Please read the instructions carefully before you start writing your answer.

1. Please check the question booklet for any missing page and or defective pages. This booklet has 7 pages.
2. Please furnish all the details asked for at the space provided in the **answer sheet**.
3. Answer all the questions in the given **answer sheet** only and submit only the **answer sheet**.
4. Question booklet has 50 multiple choice questions. Each question carries 2 marks.
5. **Each question is for 2 marks. There will be negative marking of -1 for each wrong answer.**
6. All questions are compulsory.
7. The duration of entrance test is **1 hour**.
8. Answer script to submit by email (hodbotany@nagalanduniversity.ac.in; lkr.talijungla@nagalanduniversity.ac.in; apaul@nagalanduniversity.ac.in) or WhatsApp @ 9436006808 / 7005639570/ 8732006501 within 10 minutes after scheduled time of examination, falling which answer sheet will rejected.
9. **Merit list of the candidates will be prepared purely from the marks obtained in the Entrance test and UG marks obtained (50% each).**

Examination Time: 10.30 to 11.30 AM

Date: August 19, 2021

All Questions are Compulsory**2 x 50 = 100.00**

1. An Ecotype is -
 - A) genetically different forms of the same organisms
 - B) genetically similar forms of the same organisms
 - C) morphologically different forms of the same organisms

2. Organic matter (OM) content of soil can be calculated from organic carbon (OC) by using the formula-
 - A) $OM (\%) = OC (\%) \times 1.247$
 - B) $OM (\%) = OC (\%) \times 1.724$
 - C) $OM (\%) = OC (\%) \times 1.427$

3. The net primary productivity of an ecosystem is -
 - A) the gross primary productivity minus plant respiration
 - B) the primary productivity at herbivore level
 - C) the primary productivity at consumer level

4. As per Raunkiaers law of frequency, five different classes (A, B, C, D and E) in a natural undisturbed community exhibit one of the following relationships:
 - A) $A < B > C > = < D < E$
 - B) $A > B > C > = < D < E$
 - C) $A < B < C > = D > E$

5. Ramsar Convention is associated with-
 - A) Forest conservation
 - B) Wetland conservation
 - C) Soil conservation

6. Which one of the following is not a green-house gas -
 - A) CH_4
 - B) SO_2
 - C) N_2O

7. In a soil profile, O_2 concentration
 - A) increases vertically from top to bottom
 - B) increases horizontally but not vertically
 - C) decreases vertically from top to bottom

8. Which one of the following gases has the maximum global warming potential (GWP)?
 - A) Carbon-dioxide
 - B) Methane
 - C) Water vapour

9. The casual organism of 'Tea rust' disease is a -
A) Virus
B) Algae
C) Bacteria
10. The conversion of ammonium to nitrate by soil bacteria is called
A) Ammonification
B) Nitrification
C) Nitrogen fixation
11. Sterilization by heat treatment below 100°C is
A) Pasteurization
B) Tyndallization
C) Fermentation
12. Rancidity is associated with the hydrolytic decomposition of
A) Protein
B) Amino acid
C) Fats
13. Which is a cellular defense structure in plants?
A) Hyphal Sheathing
B) Stomatal opening
C) Lenticels
14. Bacteria which grow over a temperature ranged at 40°C -75°C
A) Halophiles
B) Thermophiles
C) Psychrophiles
15. Bordeaux mixture is composed of Calcium Hydroxide and
A) Copper oxide
B) Copper Sulphate
C) Copper chloride
16. Early Blight of Potato disease is caused by
A) *Pythium*
B) *Phytophthora*
C) *Alternaria*
17. Who is the Father of Plant Pathology in India?
A) E.J. Butler
B) K.R. Kirtikar
C) K.C. Metha

18. Blanching is the method of quick immersion of food stuff in
- A) Brine
 - B) Hot water
 - C) Syrups
19. Fungistatic compound produced by the plants in response to pathogen attack
- A) Suberin
 - B) Glycoproteins
 - C) Phytoalexins
20. Which of the following enclosed filaments of *Anabaena*
- A) *Marsilea*
 - B) *Salvinia*
 - C) *Azolla*
21. *Selaginella* is a member of -
- A) Ligulopsida
 - B) Eligulopsida
 - C) Calamopsida
22. *Cyathea* is commonly known as -
- A) Horsetail
 - B) Water fern
 - C) Tree fern
23. Which one of the following heterotrichous algae grows on rocks or bark?
- A) *Stigeoclonium*
 - B) *Trentepohlia*
 - C) *Cephaleuros*
24. Stellar theory was proposed by
- A) Sacks
 - B) Foster and Gifford
 - C) Van Teghem & Douloit
25. In the archegonium of bryophytes there is presence of
- A) Ventral canal cells
 - B) Neck canal cells
 - C) Both ventral and neck canal cells
26. Which of the following bryophytes are highly specialised in the production of asexual reproductive bodies known as gemmae?
- A) True moss
 - B) Peat mosses
 - C) Liverworts

27. "Phyllotaxy" is a term that is used to describe
- A) Types of leaves on stem
 - B) Leaves arrangement on a stem
 - C) Texture of leaves
28. "Perianth" is the collective term applied to -
- A) Stamens and pistils together
 - B) Petals and sepals together
 - C) Stamens and sepals together
29. Blue green algae is known as -
- A) Rhodophyceae
 - B) Phaeophyceae
 - C) Myxophyceae
30. "Palmately veined" is a term which refers to veins arising from the
- A) Lower end of petiole
 - B) Upper end of petiole
 - C) Base of the leaf
31. Which one of the following '*vir*' genes acts as a transcriptional activator of other *vir* genes?
- A) *vir* D₁
 - B) *vir* G
 - C) *vir* D₂
32. The culturing of plant cells in liquid agitated medium is called
- A) hydroponics
 - B) aquaponics
 - C) suspension culture
33. Four multiprotein complexes (I-IV) couple electron transport to proton pumping across the mitochondrial inner membrane. To which of these complexes do electrons from succinate flow?
- A) Complex II
 - B) Complex III
 - C) Complex I
34. In Gymnosperms, the female gametophyte develops from the
- A) Nucellus cells
 - B) Haploid megaspore mother cell
 - C) Haploid megaspore
35. In higher plants, Isopentenyl pyrophosphate (IPP) is formed via two different biosynthetic pathways occurring in -
- A) mitochondria and chloroplast
 - B) ribosomes and chloroplast
 - C) cytoplasm and chloroplast

36. Digitalin, a drug, is obtained from
- A) Common Foxglove
 - B) Sarpagandha
 - C) Datura
37. Water potential is highest at
- A) -10 MPa
 - B) 10 MPa
 - C) 0 MPa
38. Latex of *Carica papaya* contains
- A) Rubber
 - B) Alkaloids
 - C) A proteolytic enzyme
39. Which of the following is not synthesized inside the nucleus of a cell
- A) mRNA
 - B) rRNA
 - C) none of the above
40. pH equal to 7.0, below and above 7.0 is
- A) acidic, basic, neutral
 - B) neutral, acidic, basic
 - C) neutral, basic, acidic
41. The DNA was labeled with ^{32}P in order to -
- A) Stimulate DNA replication
 - B) Speed up the rate of separation
 - C) Visualize the fragments
42. The process in which cDNA is produced by using a RNA template -
- A) Translation
 - B) Transcription
 - C) Reverse transcription
43. If a brown-eyed (Bb) man marries a blue-eyed (bb) woman. What will be the possible genotypes of their offspring?
- A) 50% Brown, 50% blue-eyed
 - B) 60% Brown, 40% blue-eyed
 - C) 75% Brown, 25% blue-eyed
44. Molecular scissor in genetic engineering is
- A) Ligases
 - B) DNA polymerase
 - C) Endonuclease

45. Education is a powerful instrument of
- A) Social-cultural transformation
 - B) Personal transformation
 - C) All the above
46. The state - "Honesty is the best policy" is
- A) A fact
 - B) An opinion
 - C) A value judgment
47. Autotetraploids are often marked by the presence of -
- A) univalents at Meiosis 1
 - B) multivalents at Meiosis 1
 - C) bridge at Meiosis 1
48. Identify the microorganism capable of inducing hairy root cultures for the synthesis of secondary metabolites:
- A) *Agrobacterium rhizogenes*
 - B) *Agrobacterium tumefaciens*
 - C) *Escherichia coli*
49. Plants adapted to low light intensity generally have
- A) extended root system
 - B) CAM pathway of photosynthesis
 - C) higher photosynthetic rate
50. A peroxisome-derived, dense core microbody with a unit membrane found near pore of hyphal septum in filamentous Ascomycota, is called
- A) Woronin body
 - B) Spindle polar body
 - C) Chitosome

M. Sc. Admission Entrance Test (2021) Answer Key

Q. No.	Answer	Q. No.	Answer	Q. No.	Answer	Q. No.	Answer	Q. No.	Answer
1	A	11	A	21	A	31	B	41	C
2	B	12	C	22	C	32	C	42	C
3	A	13	A	23	B	33	A	43	A
4	A	14	B	24	C	34	C	44	C
5	B	15	B	25	C	35	C	45	C
6	B	16	C	26	C	36	A	46	A
7	C	17	A	27	B	37	C	47	B
8	A	18	B	28	B	38	C	48	A
9	B	19	C	29	C	39	C	49	C
10	B	20	C	30	B	40	B	50	A