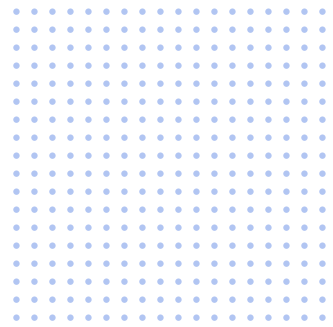




FOR KUET EXAM PREPARATION

KUET 2024

Question Paper · M.Sc. Botany

EXAM	YEAR	TYPE	SUBJECT
KUET	2024	Question Paper	M.Sc. Botany

Sr. No. **841**

ENTRANCE TEST-2024

SCHOOL OF BIOLOGICAL SCIENCES

BOTANY

Total Questions : 60
Time Allowed : 70 Minutes

Question Booklet Series

A

Roll No. :

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Instructions for Candidates :

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

SP-4495-A

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◆

[Turn over]

SEAL

1. Which of the following statements regarding algae is *not* correct ?
 - (A) Red algae lack flagella
 - (B) The flagella of a brown algal cell are unequal
 - (C) The flagella of a green algal cell are equal
 - (D) The food reserves in brown algae are stored as starch
2. In majority of lichens the fungal partner is a member of:
 - (A) Zygomycota
 - (B) Ascomycota
 - (C) Basidiomycota
 - (D) Phycomycota
3. Transduction in bacteria is mediated by :
 - (A) Cosmids
 - (B) Plasmid vectors
 - (C) Phage vectors
 - (D) F-factors
4. The fungus *Alternaria solani* belongs to division :
 - (A) Ascomycota
 - (B) Deuteromycota
 - (C) Basidiomycota
 - (D) Phycomycota
5. The first alga having been grown in culture belongs to :
 - (A) *Chara*
 - (B) *Chlamydomonas*
 - (C) *Chlorella*
 - (D) *Cladophora*
6. Which of the following is the largest virus ?
 - (A) Herpes virus
 - (B) Arbovirus
 - (C) Mumps virus
 - (D) Pox virus
7. The conjugating gametangia of *Rhizopus* are :
 - (A) Physiologically similar but morphologically dissimilar
 - (B) Physiologically dissimilar but morphologically similar
 - (C) Physiologically similar and morphologically similar
 - (D) Physiologically dissimilar and morphologically dissimilar
8. The ability to fix atmospheric nitrogen is found in the species of :
 - (A) *Chlamydomonas*
 - (B) *Oedogonium*
 - (C) *Ectocarpus*
 - (D) *Nostoc*
9. Haploid gametophytic stage is dominant in the life-cycle of :
 - (A) Pteridophytes
 - (B) Bryophytes
 - (C) Gymnosperms
 - (D) Angiosperms
10. Parasexuality occurs in which of the following ?
 - (A) Bacteria
 - (B) Algae
 - (C) Fungi
 - (D) Bryophytes



11. Which of the following genera includes gram-negative bacteria ?
 (A) *Actinomyces*
 (B) *Bacillus*
 (C) *Clostridium*
 (D) *Rhizobium*
12. *Equisetum* is commonly called :
 (A) Club moss
 (B) Horse tail
 (C) Quill wort
 (D) Stone wort
13. The wood of *Pinus* is :
 (A) Manoxylic and heteroxylous
 (B) Manoxylic and homoxylous
 (C) Pycnoxylic and heteroxylous
 (D) Pycnoxylic and homoxylous
14. The gametophytes of *Marchantia* are :
 (A) Unisexual
 (B) Bisexual
 (C) Monoecious
 (D) All of the above
15. Species of which of the following genera exhibit heterospory ?
 (A) *Equisetum*
 (B) *Selaginella*
 (C) *Psilotum*
 (D) *Dryopteris*
16. Xylem and phloem like structures present in some mosses are respectively called :
 (A) Steroids and transfusion tissue
 (B) Hydroids and leptoids
 (C) Leptoids and sieve cells
 (D) Tracheids and hydroids
17. Which one of the following statements about *Cycas* is *not* correct ?
 (A) Roots contain some blue green algae
 (B) Female cone is not well organised
 (C) Leaves have circinate vernation
 (D) Xylem is mainly composed of vessels
18. The sperms in bryophytes are :
 (A) Uniflagellate
 (B) Biflagellate
 (C) Multiflagellate
 (D) Aflagellate
19. Classifying organisms in branching patterns of evolution is the basis of :
 (A) Phenetics
 (B) Taxometrics
 (C) Numerical taxonomy
 (D) Cladistics
20. A plant or an animal specimen used by an author for original description and publication is called :
 (A) Lectotype
 (B) Holotype
 (C) Syntype
 (D) Neotype
21. 'Duramen' refers to the :
 (A) Sap wood
 (B) Porous wood
 (C) Non-porous wood
 (D) Heart wood

22. The chief merit of Bentham and Hooker's system of classification is that :
- It is a natural system of classification of all groups of plants
 - It is a system of classification based on an evolutionary concept
 - It also takes into account the phylogenetic aspect of plants
 - Description of genera and species is based on study of actual specimens
23. The oldest layer of secondary phloem in a five-year old stem lies :
- Just inner to cambium
 - Just outside the cambium
 - Just inner to pericycle
 - Just outside the primary xylem
24. Dichotomous keys for identification of plants were first introduced by :
- C. Linnaeus in 1753
 - M. Adanson in 1763
 - J. P. Lamarck in 1778
 - A. P. de Candolle in 1778
25. Which of the following chemical ions plays an important role in the growth of pollen tube ?
- Chlorine
 - Calcium
 - Magnesium
 - Sulphate
26. Pollination by ants is formally called as :
- Cantharophily
 - Cheiropterophily
 - Myrmecophily
 - Psychophily
27. The classification of Carl Linnaeus represents :
- An artificial system of classification
 - Natural system of classification
 - Evolutionary system of classification
 - Cladistic system of classification
28. 'Quiescent Centre' of the root apical meristem is :
- Totally devoid of divisions
 - Relatively inactive in divisions
 - Very active in divisions
 - None of the above
29. The Angiosperm Phylogeny Group (APG) IV system of flowering plant classification was published in :
- 2009
 - 2016
 - 2003
 - 1998
30. Tunica-carpus type of cell organization occurs in the anatomy of :
- Roots
 - Shoots
 - Leaves
 - Flowers
31. The nature of the secondary nucleus of an angiosperm after fertilization is :
- x
 - 2x
 - 3x
 - 4x

32. *Polygonum* type of embryo sac is :
- 7-celled and 7-nucleate
 - 8-celled and 7-nucleate
 - 7-celled and 8-nucleate
 - 8-celled and 8-nucleate
33. Choose the one with *correct* taxonomic hierarchical sequence :
- Species—Series—Section—Genus—Family—Order
 - Species—Genus—Series—Section—Family—Order
 - Series—Section—Species—Genus—Order—Family
 - Species—Genus—Family—Series—Section—Order
34. That water, *not* carbon dioxide, is split in photosynthesis was first proposed by :
- J. Priestley
 - F. F. Blackman
 - C. B. van Niel
 - Van Helmont
35. The term 'taxon' in the following refers to :
- Family
 - Genus
 - Species
 - Oryza sativa*
36. Which of the following is a micronutrient ?
- Potassium
 - Magnesium
 - Zinc
 - Calcium
37. Which one of the following is a connecting link between Glycolysis and Krebs's cycle ?
- Succinic acid
 - Fumaric acid
 - Acetyl Co A
 - PGA
38. The first stable product formed in C_4 carbon-fixation pathway is :
- Phosphoglycerate
 - Oxaloacetate
 - Transaldolase
 - Aspartate
39. The reactions of TCA cycle in eukaryotic cells occur within :
- Grana
 - Ribosomes
 - Mitochondria
 - Endoplasmic reticulum
40. In PSI, the reduced ferredoxin donates electrons to :
- $NADPH_2$
 - NADP
 - NADPH
 - NAD
41. The formation of ATP by direct transfer of a phosphoryl group from phosphoenol pyruvate is an example of :
- Oxidative phosphorylation
 - Substrate-level phosphorylation
 - Photo-respiration
 - None of the above

42. The modified Mendelian ratio 9:7 in F_2 progeny signifies the presence of :
- Complementary genes
 - Duplicate genes
 - Epistatic genes
 - None of the above
43. Which of the following plant hormones was isolated by Kogl and his associates from human urine ?
- Gibberellin
 - Ethylene
 - Auxin
 - Abscissic acid
44. Which of the following statements is *not* correct ?
- Alleles occupy the same locus
 - The 2nd law of Mendel is the "Principle of Independent Assortment"
 - Chemicals which cause point mutations are called mutagens
 - Linkage and Crossing over were clarified by the studies of Gregor Mendel
45. In a trisomic individual, the number of chromosomes is :
- $2n-1$
 - $2n+2$
 - $2n+3$
 - $2n+1$
46. Nucleoli are the sites of formation of :
- Ribosomal RNA
 - Thylakoids
 - Cristae
 - None of the above
47. Which of the following is *not* a characteristic of t-RNA ?
- It contains an anticodon
 - It contains a codon
 - It can become attached covalently to an amino acid
 - It interacts with mRNA during transcription
48. In *lac* operon, lactose acts as :
- Inducer
 - Co-inducer
 - Repressor
 - Co-repressor
49. A couple has three daughters. The probability of their fourth child also to be a daughter is :
- 100 %
 - 75 %
 - 50 %
 - 25 %
50. Which of the following ecosystems has the lowest primary productivity per m^2 ?
- Salt marsh
 - Grassland
 - Open ocean
 - Tropical rain forest
51. The microbes that bring about conversion of ammonium into nitrate during the process of nitrification are :
- Chemo-heterotrophic
 - Chemo-autotrophic
 - Photo-autotrophic
 - Photo-heterotrophic

52. The average thickness of plasma membrane is :
 (A) 75 Å
 (B) 125 Å
 (C) 25 Å
 (D) 35 Å
53. The sequence of energy flow through a food chain is :
 (A) Primary consumers-Producers-Higher order consumers
 (B) Producers- Higher order consumers-Primary consumers
 (C) Higher order consumers-Primary consumers-Producers
 (D) Producers-Primary consumers-Higher order consumers
54. Which of the following types of DNA has left-handed helix ?
 (A) A-type
 (B) B-type
 (C) C-type
 (D) Z-type
55. Plant parts useful for extraction of opium from *Papaver somniferum* are :
 (A) Young seedlings
 (B) Old leaves
 (C) Dried flowers
 (D) Unripe fruits (seed capsules)
56. Saffron of commerce is obtained from which part of *Crocus sativus* ?
 (A) Sepals
 (B) Petals
 (C) Stigmas
 (D) Anthers
57. One of the chief characters of xerophytes is the abundance of :
 (A) Parenchyma
 (B) Aerenchyma
 (C) Sclerenchyma
 (D) Food materials
58. Species of which of the following genera yield cotton ?
 (A) *Gossypium*
 (B) *Triticum*
 (C) *Brassica*
 (D) *Oryza*
59. How many genetically different types of gametes will be produced by a heterozygous plant with the genotype TTBbRr ?
 (A) Two
 (B) Four
 (C) Six
 (D) Eight
60. *Brassica campestris* is :
 (A) A fibre plant
 (B) A timber plant
 (C) An oil plant
 (D) A spice plant