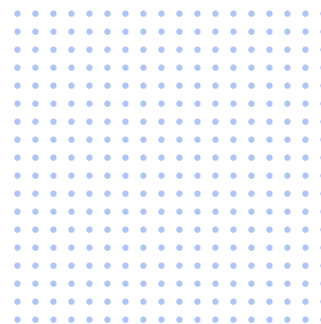




FOR KUET EXAM PREPARATION

KUET 2023

Question Paper · M.Sc. Botany

EXAM	YEAR	TYPE	SUBJECT
KUET	2023	Question Paper	M.Sc. Botany

Sr. No.

ENTRANCE TEST-2023**SCHOOL OF BIOLOGICAL SCIENCES****BOTANY**

Question Booklet Series

A

Total Questions : 60

Time Allowed : 70 Minutes

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.

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❖**[Turn over**

1. Hopanoids are found in:
 - (A) Viruses
 - (B) Archaea
 - (C) Bacteria
 - (D) Both (B) and (C)
2. The flexible spiral-shaped bacteria with unique internal flagellar arrangements are called as:
 - (A) Pleiomorphic
 - (B) Spirilla
 - (C) Spirochetes
 - (D) Both (B) and (C)
3. Reverse transcriptase in Retroviruses is an:
 - (A) RNA-dependent DNA Polymerase
 - (B) DNA-dependent DNA Polymerase
 - (C) RNA-dependent RNA Polymerase
 - (D) DNA-dependent RNA Polymerase
4. Endospore formation in bacteria mainly represents:
 - (A) Reproductive strategy
 - (B) Survival strategy
 - (C) Multiplication strategy
 - (D) Both (A) and (B)
5. The two water insoluble materials in fungal cell wall include:
 - (A) Alpha-glucans and Beta-glucans
 - (B) Alpha-glucans and chitin
 - (C) Beta-glucans and chitin
 - (D) All of the above
6. Aplanospores are characteristic of:
 - (A) Zygomycetes
 - (B) Ascomycetes
 - (C) Basidiomycetes
 - (D) Both (A) and (B)
7. *Venturia cerasi* causes scab in:
 - (A) Apple
 - (B) Cherry
 - (C) Pear
 - (D) Willow
8. Lichens growing on the bark of tree trunks are called as:
 - (A) Saxicolous
 - (B) Terricolous
 - (C) Corticolous
 - (D) Lignicolous
9. Flagella are absent in:
 - (A) Bacillariophyceae
 - (B) Dinophyceae
 - (C) Phaeophyceae
 - (D) Rhodophyceae
10. With reference to range of thallus structure, choose the correct match:

<u>Column-I</u>	<u>Column-II</u>
i. Unbranched	a. <i>Cladophora</i>
ii. Branched	b. <i>Ulva</i>
iii. Dendroid	c. <i>Zygnema</i>
iv. Parenchymatous	d. <i>Ecballiocystopsis</i>
(A) i-d, ii-a, iii-b, iv-c	
(B) i-d, ii-c, iii-b, iv-a	
(C) i-a, ii-d, iii-b, iv-c	
(D) i-c, ii-a, iii-d, iv-b	
11. A single pyrenoid occurs in:
 - (A) *Oedogonium*
 - (B) *Chlamydomonas*
 - (C) *Nostoc*
 - (D) Both (B) and (C)

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12. Agar is derived from:
 - (A) *Gracilaria*
 - (B) *Gonium*
 - (C) *Gloeocapsa*
 - (D) All of the above
13. The type of embryogeny found in bryophytes is:
 - (A) Endoscopic
 - (B) Exoscopic
 - (C) Entropic
 - (D) Both (A) and (C)
14. Which one of the following statements is incorrect for *Marchantia*?
 - (A) The scales are arranged in a single row
 - (B) The rhizoids are of two kinds
 - (C) The upper surface of the thallus possesses air pores
 - (D) The gametophores are unisexual
15. The protonema stage in *Funaria* is:
 - (A) Non-filamentous
 - (B) Non-vegetative
 - (C) Transitory
 - (D) All of the above
16. In bryophytes, apospory involves development of a:
 - (A) Sporophyte from the sporophyte without meiosis
 - (B) Sporophyte from the gametophyte without union of male and female gametes
 - (C) Gametophyte from the gametophyte without union of gametes
 - (D) None of the above
17. Which one of the following is correct for *Rhynia*?
 - (A) Adventitious branches are present
 - (B) The sporangia are axillary
 - (C) Rhizoids are present
 - (D) Both (A) and (B)
18. Siphonostele is found in:
 - (A) *Selaginella*
 - (B) *Rhynia*
 - (C) *Equisetum*
 - (D) Both (B) and (C)
19. In Christenhusz *et al.* (2011) classification, extant gymnosperms are divided into four:
 - (A) Phyla
 - (B) Subphyla
 - (C) Classes
 - (D) Subclasses
20. Gymnosperms lack:
 - (A) Herbaceous habit
 - (B) Circinate venation
 - (C) Microphyllous leaves
 - (D) All of the above
21. Which one of the following statements is incorrect for the Bentham and Hooker system of classification:
 - (A) It was published in *Species Plantarum*
 - (B) It deals with phanerogams
 - (C) Gymnosperms were placed between dicots and monocots
 - (D) All of the above

22. Classification based on a single or few easily observable characters without character weighing is:
- Artificial system of classification
 - Phenetic system of classification
 - Evolutionary system of classification
 - Phyletic system of classification
23. Phenograms are the:
- Dendrograms showing evolutionary relationship between taxa
 - Dendrograms showing overall similarity relationship between taxa
 - Dendrograms showing comparative relationship between taxa
 - Both (B) and (C)
24. APG classification deals with:
- Archaeobacteria
 - Algae
 - Angiosperms
 - All of the above
25. Nomenclature refers to:
- Identifying a taxon by its scientific name
 - Rules for scientific naming of a taxon
 - Classifying a taxon
 - Diagnosis of a taxon
26. As per the Principle of Priority, the valid scientific name is the:
- Oldest name
 - Most recent name
 - Earliest correct name
 - Most recent correct name
27. Dichotomous keys are a type of:
- Polyclave keys
 - Punched card keys
 - Multi access keys
 - Sequential keys
28. ICN stands for:
- International Code of Nomenclature for algae and plants
 - International Code of Nomenclature for plants and fungi
 - International Code of Nomenclature for algae, fungi, and plants
 - International Code of Nomenclature for algae, plants, and fungi
29. In grasses, intercalary meristems are located at the:
- Apex of the leaves
 - Margin of the leaves
 - Middle of the internodes
 - Base of the internodes
30. In orchid aerial roots, the velamen is basically:
- Hypodermis
 - Uniseriate epidermis
 - Multiseriate epidermis
 - None of the above
31. The cambium arising within bundles of primary vascular tissue of stem is called as:
- Procambium
 - Fascicular cambium
 - Interfascicular cambium
 - Both (B) and (C)

32. Vascular bundles in stem of Sunflower are:
- Conjoint, bicollateral, open and endarch
 - Conjoint, collateral, open and mesarch
 - Conjoint, collateral, open and endarch
 - None of the above
33. In which pathway, casparian strip obstructs the movement of water in plants ?
- Symplast at hypodermis
 - Symplast at endodermis
 - Apoplast at endodermis
 - Both (B) and (C)
34. Die-back of citrus is caused by the deficiency of:
- Boron
 - Copper
 - Iron
 - Zinc
35. Which of the following is true about Vacuolar H^+ -ATPases:
- Differ from plasma membrane H^+ -ATPases structurally
 - Differ from plasma membrane H^+ -ATPases functionally
 - Are specifically inhibited by the antibiotic bafilomycin
 - All of the above
36. In photosystem second (PS II), the first acceptor of electron is:
- Plastocyanin
 - Pheophytin
 - Plastoquinone
 - Cytochrome b_6f complex
37. Which of the following is not true about TCA cycle ?
- Acts as a metabolic sink which plays a central role in intermediary metabolism
 - CO_2 is released during the formation of succinic acid from succinyl-CoA
 - Three regulatory enzymes include citrate synthase, isocitrate dehydrogenase and α -Ketoglutarate dehydrogenase
 - Succinate dehydrogenase contains FAD as a cofactor
38. Match the related features of the following columns and choose the correct pairing below:
- | <u>Column-I</u> | <u>Column-II</u> |
|----------------------------|-----------------------|
| i. Sugarcane | a. <i>Anabaena</i> |
| ii. <i>Gunnera</i> | b. <i>Frankia</i> |
| iii. <i>Azolla</i> | c. <i>Nostoc</i> |
| iv. Actinorhizal plants | d. <i>Acetobacter</i> |
| (A) i-b, ii-c, iii-d, iv-a | |
| (B) i-d, ii-c, iii-a, iv-b | |
| (C) i-d, ii-b, iii-a, iv-c | |
| (D) i-a, ii-b, iii-c, iv-d | |
39. The physiologically active form of phytochrome is:
- Pr
 - Pfr
 - Both (A) and (B)
 - None of the above
40. Which of the following statement is incorrect about Indole-3-acetic acid (IAA) ?
- It is the main natural auxin.
 - It is synthesized in meristems and young dividing tissues.
 - Polar transport of IAA requires energy and is dependent of gravity.
 - Both (A) and (C)

41. Recessive lethal alleles are lethal when present in:
(A) Homozygous condition
(B) Heterozygous condition
(C) Both (A) and (B)
(D) None of the above
42. A heterozygous pea plant that is tall with yellow seeds, TtYy, is allowed to self-fertilize. What is the probability of off-springs with tall and yellow seeds, tall and green seeds, and dwarf and yellow seeds?
(A) 74%
(B) 65%
(C) 94%
(D) 50%
43. Inversions spanning the centromere are known as:
(A) Pericentric
(B) Paracentric
(C) Acentric
(D) Metacentric
44. Bar eye phenotype in *Drosophila* occurs due to:
(A) Deletion of 16A locus of the X-chromosome
(B) Duplication of 16A locus of the X-chromosome
(C) Translocation of 16A locus of the X-chromosome
(D) Deletion of 16A locus of the Y-chromosome
45. The “distribution and shipping department of cell’s chemical products” is:
(A) Endoplasmic reticulum
(B) Lysosomes
(C) Peroxisomes
(D) Golgi apparatus
46. Choose the correct combination:
(A) Bouquet stage: Zygotene
(B) Spirene stage: Anaphase
(C) Congression: Metaphase
(D) Synzetic knot: Diplotene
47. Nuclear localization signal present on the proteins transported to nucleus is:
(A) Lysine rich identified by Exportin
(B) Leucine rich identified by Importin
(C) Lysine rich identified by Importin
(D) Leucine rich identified by Exportin
48. Tryptophan operon in *E. coli* is an example of:
(A) Positively controlled inducible operon
(B) Positively controlled repressible operon
(C) Negatively controlled repressible operon
(D) None of the above
49. Pollination by ants is known as:
(A) Melittophily
(B) Malacophily
(C) Myrmecophily
(D) Myophily
50. The ovules in which micropyle-chalaza line is horizontal and placed at right angle to the line of funicle are known as:
(A) Anatropous
(B) Orthotropous
(C) Hemitropous
(D) Amphitropous

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51. *Polygonum*-type of embryo sac consists of:
 (A) 7 cells and 7 nuclei
 (B) 8 cells and 7 nuclei
 (C) 7 cells and 8 nuclei
 (D) 8 cells and 8 nuclei
52. Embryogenesis in *Citrus* is an example of:
 (A) Simple polyembryony
 (B) Adventive polyembryony
 (C) Cleavage polyembryony
 (D) None of the above
53. Raunkiaer's life forms are recognised on the basis of:
 (A) Minimum height of the plants
 (B) Canopy dominance of the plants
 (C) Position of perennating buds on plants
 (D) Life span of the plant
54. An ecotone has:
 (A) Lower number of species as compared to neighboring communities
 (B) Higher number of species as compared to neighboring communities
 (C) Almost equal number of species as occurring in neighboring communities
 (D) Both (B) and (C)
55. The type of ecological succession in which the existing community is replaced by external factors is referred to as:
 (A) Secondary succession
 (B) Autogenic succession
 (C) Autotrophic succession
 (D) Allogenic succession
56. Kashmir falls in the Indian biogeographic province of:
 (A) Trans-Himalaya
 (B) West Himalaya
 (C) Western Himalaya
 (D) North-West Himalaya
57. *Crocus sativus* belongs to the family:
 (A) Ixioliraceae
 (B) Iridaceae
 (C) Crocusaceae
 (D) Cruciferae
58. Cotton is an example of:
 (A) Bast fibres
 (B) Structural fibres
 (C) Surface fibres
 (D) Xylary fibres
59. Which part of *Saussurea costus* plant is medicinally most important?
 (A) Root
 (B) Leaves
 (C) Flowers
 (D) Fruits
60. Which of the following is not related with *Papaver somniferum*?
 (A) Morphine
 (B) Codeine
 (C) Opine
 (D) Noscapine

ROUGH WORK**SM-29581-A****8**
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