aglasem.com

FOR KUET EXAM PREPARATION

KUET 2021 Question Paper · M.Sc. Botany

EXAM	YEAR	TYPE	SUBJECT
KUET	2021	Question Paper	M.Sc. Botany

Sr. No. .....

ENTRANCE TEST-2021

SCHOOL OF BIOLOGICAL SCIENCES

BOTANY

Question Booklet Series **A**

Total Questions : 60
Time Allowed : 70 Minutes

Roll No. : | | | | | | |

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.

❇

aglasem.com For more Question Papers, Sample Papers, Notes & Syllabus visit aglasem.com

1. A seed can be conceived to have evolved from a specialized megasporangium via:
   (A) Reduction in the number of megaspores to one
   (B) Sinking of megaspore towards the basal part of megasporangium
   (C) Displacement of the vascular strand and its division into two branches
   (D) All the above
2. Which of the following is true for the gemmae in Marchantia ?
   (A) Chlorophyllous structures
   (B) Have two or more lateral notches
   (C) Born on one celled stalk
   (D) All of the above
3. In photosynthesis, the first step is:
   (A) Photolysis of water
   (B) Production of $NADPH_2$
   (C) Photoexcitation of chlorophyll
   (D) Synthesis of ATP
4. The precursor for abscissic acid (ABA) is:
   (A) Zeatin
   (B) Lutein
   (C) Violaxanthin
   (D) Mevalonic acid
5. What is the most precise function of the filiform apparatus?
   (A) Guide the entry of pollen tube
   (B) Recognize the suitable pollen at the stigma
   (C) Produce nectar
   (D) Stimulate division of generative cell
6. Functional megaspore in an angiosperm develops into:
   (A) Endosperm
   (B) Embryo
   (C) Embryo-sac
   (D) Ovule
7. When the activity of one gene is suppressed by the activity of a non-allelic gene, it is known as:
   (A) Pseudo-dominance
   (B) Hypostasis
   (C) Epistasis
   (D) Incomplete dominance
8. Which term represents a pair of contrasting characters?
   (A) Heterozygous
   (B) Homozygous
   (C) Codominant genes
   (D) Allelomorphs
9. In the life cycle of a pine tree, the ovules are found on the:
   (A) Needlelike leaves
   (B) Seed cones
   (C) Pollen cones
   (D) Roots, stems and leaves
10. The influence of parent material is:
   (A) More evident on soils from glaciated region than comparable un-glaciated regions
   (B) More evident on soils from un-glaciated region than comparable glaciated regions
   (C) Equally evident on soils from both glaciated and un-glaciated regions
   (D) None of the above
11. Histones, the very important constituent of chromatin, represent a family of:
   (A) Negatively charged protiens
   (B) Positively charged protiens
   (C) Both positively and negatively charged protiens
   (D) Carbohydrates not protiens
12. Which of the following is true about *Nostoc* ?
   (A) Akinetes are produced
   (B) Heterocysts are produced
   (C) Trichomes are embedded in mucilage
   (D) All of the above

13. The function of a catalyst is to:
    (A) Decrease the rate of a reaction by way of affecting the reaction equilibria
    (B) Increase the rate of a reaction by way of affecting the reaction equilibria
    (C) Decrease the rate of a reaction but not affecting the reaction equilibria
    (D) Increase the rate of a reaction but not affecting the reaction equilibria
14. Which of the following is not true for the palmella stage in *Chlamydomonas* ?
    (A) It is a means of sexual reproduction
    (B) It is a means of asexual reproduction
    (C) A large number of near naked cells devoid of flagella lie inside a mucilage mass
    (D) The stage develops in response to unfavourable water conditions and toxic chemicals
15. Introns are segments of DNA that:
    (A) Are expressed as genes
    (B) Regulate mRNA production
    (C) Code for long sequences of amino acids
    (D) Are inserted between expressed genes
16. Which of the following is not true about the Sieve cells and Sieve tube elements ?
    (A) They are morphologically almost equivalent
    (B) They are alike in fundamental structure and function
    (C) They are quite similar in perforation pattern of their wall
    (D) They differ in perforation pattern of their wall
17. Which of the following Botanical Gardens is not correctly matched with its place ?
    (A) Royal Botanical Garden - Kew
    (B) Pisa Botanical Garden - Italy
    (C) Missouri Botanical Garden - USA
    (D) Padua Botanical Garden - Germany
18. In the host cell, replication of RNA virus takes place in:
    (A) Nucleus
    (B) Cytoplasm
    (C) Mitochondria
    (D) Centriole
19. The phase of the cell cycle immediately preceding mitosis is called:
    (A) S phase
    (B) G1 phase
    (C) G2 phase
    (D) M phase
20. Protein molecules that differ in a few amino acid residues are called:
    (A) Isoforms
    (B) Isotypes
    (C) Glycoforms
    (D) Polymers
21. Which of the following is mismatched ?
    (A) Pollen grain – microgametophyte
    (B) Ovule – megagametophyte
    (C) Seed – immature sporophyte
    (D) Pollen tube – spores
22. Which of these are found in all viruses?
    (A) Envelope, nucleic acid, capsid
    (B) DNA, RNA, proteins
    (C) Proteins and a nucleic acid
    (D) Proteins, nucleic acids, carbohydrates and lipids.
23. During bacterial conjugation, as a result of cross between F^+ and F^-:
    (A) F^- becomes F^+ and F^+ remains F^+
    (B) F^- becomes F^+ and F^+ becomes F^-
    (C) F^+ becomes F^- and F^- remains F^-
    (D) F^+ remains F^+ and F^- remains F^-

aglasem.com For more Question Papers, Sample Papers, Notes & Syllabus visit aglasem.com

24. The most conspicuous feature(s) of Equisetum include:
    (A) Jointed nature of stems
    (B) Intercalary growth
    (C) Small leaves around the nodes
    (D) All the above
25. A low K_M value indicates:
    (A) High substrate concentration
    (B) High product concentration
    (C) Weak enzyme-substrate binding
    (D) Strong enzyme-substrate binding
26. Which of the following pigments does not have oxygen in its molecule ?
    (A) Chlorophyll a
    (B) Chlorophyll b
    (C) Carotene
    (D) Xanthophyll
27. In photorespiration the molecule that is oxidized in mitochondria to release CO_2 is:
    (A) Glycine
    (B) Glycolate
    (C) Glyoxylate
    (D) Glyceric acid
28. The enzymes of glycolysis are present in:
    (A) Outer mitochondrial membrane
    (B) Inner mitochondrial membrane
    (C) Mitochondrial matrix
    (D) Cytosol
29. Which of the following is not a termination codon in the universal genetic code ?
    (A) AUG
    (B) UGA
    (C) UAG
    (D) UAA
30. The pressure-flow model of phloem transport states that:
    (A) phloem sap always flows from the root to the leaves
    (B) water flow brings sucrose from a source to a sink
    (C) water pressure creates a flow of water
    (D) Both (B) and (C) are correct
31. A plant requiring a dark period of at least 14 hours will:
    (A) flower if a 14-hour night is interrupted by a flash of light
    (B) not flower if a 14-hour night is interrupted by a flash of light
    (C) not flower if the days are 14 hours long
    (D) Both (B) and (C) are correct
32. In which of the following processes molybdenum has an important role ?
    (A) Nitrogen fixation
    (B) Flower induction
    (C) Chromosome contraction
    (D) Carbon assimilation
33. The cell at zero turger pressure shows:
    (A) Evident plasmolysis
    (B) Incipient plasmolysis
    (C) Limiting plasmolysis
    (D) Deplasmolysis
34. Which of the following concepts in APG-II received criticism, hence was abandoned in APG-III ?
    (A) Phylogentic principle and constructing taxa on the basis of monophyly
    (B) Reduction in the number of unplaced families
    (C) Bracketed keys
    (D) Construction of supraordinal monophyletic clades

aglasem.com For more Question Papers, Sample Papers, Notes & Syllabus visit aglasem.com

35. Which of the following characterize the monocot ?
(A) Root phloem between arms of xylem
(B) Root xylem and phloem in a ring
(C) Stem vascular bundles in a distinct ring
(D) Stem and root vascular bundles with same arrangement

36. Between the bark and the wood in a woody stem, there is a layer of meristem called:
(A) Cork cambium
(B) Vascular cambium
(C) Procambium preceding bark
(D) Apical meristem

37. Which of the following types of plants are most likely to be benefitted under increased CO_2 concentration in a climate change context ?
(A) C3 plants to be benfitted more than C4 plants
(B) C4 plants to be benfitted more than C3 plants
(C) Both C3 and C4 to be equally benefitted
(D) Neither C3 nor C4 plants to be benefitted at all

38. A pollen grain is a:
(A) a haploid structure
(B) a diploid structure
(C) first a diploid and then a haploid structure
(D) first a haploid and then a diploid structure

39. A cross between homozygous recessive and heterozygous plant is:
(A) Monohybrid cross
(B) Dihybrid cross
(C) Test cross
(D) Back cross

40. When both alleles express their effect on being present together, the phenomenon is called:
(A) Dominance
(B) Codominance
(C) Pseudodominance
(D) Aphidominance

41. A chromosome with sub-terminal centromere is:
(A) Acentric
(B) Acrocentric
(C) Metacentric
(D) Telocentric

42. Which of the following is the principal cereal of tropics and was introduced from Old World into New World ?
(A) Maize
(B) Potato
(C) Rice
(D) Tobacco

43. Opium is obtained from:
(A) *Rauvolfia serpentina*
(B) *Arnebia benthamii*
(C) *Saussurea costus*
(D) *Papaver somniferum*

44. The National Botanical Research Institute is located in:
(A) New Delhi
(B) Lucknow
(C) Kolkata
(D) Bengaluru

45. Which of these is mismatched?
(A) Polar nuclei – plumule
(B) Ovary – fruit
(C) Egg and sperm - zygote
(D) Ovule – seed

46. The megasporocyte and the microsporocyte:
(A) Both produce pollen grains
(B) Both divide meiotically
(C) Both divide mitotically
(D) Produce pollen grains and embryo sacs, respectively

47. Which of the following is a well-known greenhouse gas ?
(A) N_2O
(B) NO
(C) NO_2
(D) None of the above

48. The interaction in which one species is harmed and the other is unaffected is called:
(A) Amensalism
(B) Commensalism
(C) Parasitism
(D) Predation

49. Which of the following is the best example of a perfect nutrient cycle ?
(A) Nitrogen cycle
(B) Phosphorus cycle
(C) Carbon cycle
(D) Sulphur cycle

50. Which of the following statements is true ?
(A) Grazing food chains are dominant in terrestrial ecosystems while the detritus based ones are so in aquatic ecosystems
(B) Detritus based food chains are dominant in terrestrial ecosystems while the grazing ones are so in aquatic ecosystems
(C) Detritus based and grazing food chains are equally dominant in terrestrial ecosystems as well as aquatic ecosystems
(D) None of the above

51. Which of the following names of Taxonomic Keys is not correctly matched ?
(A) Yoked – Indented
(B) Bracketed – Parallel
(C) Serial – Numbered
(D) Indented – Bracketed

52. Which of the following is not a strategy for ex-situ conservation ?
(A) Botanical garden
(B) Biosphere reserve
(C) Seed bank
(D) Cryopreservation

53. Mycorrhizas are critically important for host plants under:
(A) Low phosphorus conditions in soil
(B) High phosphorus conditions in soil
(C) Aquatic environments
(D) None of the above conditions

54. A specimen which is a duplicate of the holotype, collected from the same place, at the same time and by the same person is called the:
(A) Lactotype
(B) Neotype
(C) Isotype
(D) Topotype

55. The technique used to make huge number of copies of a specific DNA segment is:
(A) Ligase chain reaction
(B) Polymerase chain reaction
(C) Transcription
(D) Translation

56. Chipko movement was launched for the protection of:
(A) Wetlands
(B) Forests
(C) Grasslands
(D) Esturies

aglasem.com For more Question Papers, Sample Papers, Notes & Syllabus visit aglasem.com

57. The surface of the gill, on both sides, in Agaricus is covered with a fertile layer called:
(A) Hymenium
(B) Basidium
(C) Cystidium
(D) Closteridium

58. The casparian strip affects:
(A) how water and minerals move into the vascular cylinder
(B) vascular tissue composition
(C) how organic nutrients move into the vascular tissue
(D) how soil particles function

59. According to Vavilov, the origin of cultivated wheat is:
(A) Africa
(B) South America
(C) Australia
(D) Ancient Mediterranean including Southwest Asia

60. The characteristic feature(s) of Rhyniophytes include:
(A) Sporangia at the tips of branches
(B) Green stems
(C) Both (A) and (B)
(D) Neither (A) nor (B)

aglasem.com For more Question Papers, Sample Papers, Notes & Syllabus visit aglasem.com

ROUGH WORK