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No.

ENT-29

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Shivaji University, Kolhapur
M. Sc. Entrance Exam 2023 Question paper
Subject : Botany
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Day and Date : Tuesday, 08-08-2023

Total Marks : 100

Time : 10.30 am To 12.00 noon

1. Photosynthetic pigment fucoxanthin is present in
 - a) Chlorophyta
 - b) Pyrrophyta
 - c) Cyonophyta
 - d) Phaeophyta
2. Viruses areparasites
 - a) Obligate
 - b) Facultative
 - c) Saprophytic
 - d) Endophytic
3.is a causal organisms of citrus canker.
 - a) Xanthomonas citri
 - b) Xanthomonas malvacearum
 - c) Erwinia amylovera
 - d) Vibrio sp.
4. is responsible for rust disease in tea plant.
 - a) Mucor
 - b) Euglena
 - c) Cephaleuros
 - d) Laminaria

5. The process of soil formation from parent rock is called as
- decomposition
 - volcano
 - hardening
 - weathering
6. Two adjoining communities develop a common zone called as
- Bridge
 - ecotone
 - ecotype
 - ecocline
7. The term ecosystem was first proposed by
- Lindemann
 - Tansley
 - Misra
 - Odum
8. A duplicate specimen of holotype which is deposited by the original author is referred as
- Syntype
 - Lectotype
 - Isotype
 - Neotype
9. Lead Botanical Garden is funded by
- UGC
 - MOEF
 - DBT
 - DST
10. In angiosperms, endosperm is always
- haploid
 - diploid
 - triploid
 - polyploid
11. When the stamens are attached to other parts of flower, then it is called of stamens.
- adhesion
 - cohesion
 - union
 - fusion

12. Ovule is straight with funiculus, embryo sac, chalaza and micropyle lies on one straight line is called
- a. orthotropous
 - b. anatropous
 - c. campylotropous
 - d. amphitropous
13. The condition best suited for autogamy is
- a) homogamy
 - b) Chasmogamy
 - c) dichogamy
 - d) cleistogamy
14. The chemical formula of chlorophyll a is
- a) $C_{55}H_{72}O_5N_4Mg$
 - b) $C_{55}H_{74}O_6N_4Mg$
 - c) $C_{52}H_{70}O_5N_4Mg$
 - d) $C_{56}H_{72}O_5N_5Mg$
15. The first CO_2 acceptor in C_3 plant is
- a) Phosphoenol pyruvic acid
 - b) Ribulose diphosphate
 - c) Oxalo acetic acid
 - d) Phosphoglyceric acid
16. Reversion of sex expression is a physiological role of.
- a) auxin
 - b) gibberellin
 - c) cytokinin
 - d) aba

17. Cork is formed from
- a) phellogen
 - b) vascular cambium
 - c) phelloderm
 - d) phellem
18. Casparian are the characteristics of
- a) cortex
 - b) endodermis
 - c) pericycle
 - d) pith
19. The metal ions attached to enzymes are called
- a) co-enzymes
 - b) apoenzymes
 - c) co-factors
 - d) holoenzymes
20. In bacterium *Klebsiella pneumoniae* number of genes are present.
- a) 5-15
 - b) 10-16
 - c) 17-20
 - d) 20-25
21. What is the main factor that causes crossing over during meiosis.....
- a) synapsis of homologous chromosomes
 - b) separation of homologous chromosomes
 - c) separation of sister chromatids
 - d) condensation of chromatin

22. The size, shape and morphology of chromosomes of an organism constitute.....
- a) morphotypes
 - b) Isotypes
 - c) karyotype
 - d) phenotype
23. Plastid inheritance studied in plant.
- a) Bougainvillea spectabilis
 - b) Datura alba
 - c) Mirabilis jalapa
 - d) Pisum sativum
24. Mitochondrial inheritance studied in fungi.
- a) Agaricus bispora
 - b) Alternaria alternata
 - d) Fusarium oxysporum
 - c) Neurospora crassa
25. Point mutation involve
- a) deletion
 - b) insertion
 - c) changes in single base pair
 - d) duplication
26. The population genetics was studied by
- a) Hardy and Weinberg
 - b) Ehle and East
 - c) Mendel
 - d) Corren's

27. Cytoplasmic inheritance was first reported by
- a) Correns
 - b) Sutton
 - c) Mendel
 - d) Johnson
28. Euploidy is a chromosomal variation in
- a) size
 - b) number
 - c) position of genes
 - d) structure
29. If extra chromosome segment is located in the same chromosome but away from normal segment, it is calledduplication.
- a) tandem
 - b) reverse tandem
 - c) displaced
 - d) deletion
30. What is the purpose of backcrossing in plant breeding?
- a) To introduce genetic variation
 - b) To produce offspring with desirable traits
 - c) To improve the quality of the parent plant
 - d) To increase the yield of the parent plant
31. The procedure of differential staining of bacteria was developed by
- a) A. H. Gram
 - b) H. C. Gram
 - c) N. C. Gram
 - d) H. A. Gram
32. The virus mediated bacterial recombination is known as
- a) transduction
 - b) conjugation
 - c) transformation
 - d) recombination

33. Genetic recombination between bacterial cells is first demonstrated by
- a) Ochoa and Korenberg
 - b) H. G. Khorana
 - c) H. J. Muller
 - d) Leaderberg and Tatum
34. Penicillin is commercially produced from
- a) *P. notatum*
 - b) *P. citrinum*
 - c) *P. chrysogenum*
 - d) *P. roqueforti*
35. The purification and recovery of the production after fermentation is called
- a) upstream process
 - b) downstream process
 - c) surface fermentation
 - d) open fermentation
36. is used in the fermentation of sugar to obtain alcohol.
- a) *Penicillium*
 - b) *Taphrina*
 - c) *Saccharomyces*
 - d) *Phytoplasma*
37. is considered as father of plant pathology.
- a) Heinrich Anton de Bary
 - b) Heinrich harrier
 - c) Heinrich Heine
 - d) Carl Lewis

38. Bacterial disease was first reported by
- a) Cark Lewis
 - b) Sir Edwin John Butler
 - c) Heinrich Antol de Bary
 - d) Thomas J. Burrel
39. Damping off is a disease.
- a) fungal
 - b) bacterial
 - c) nematodal
 - d) viral
40. Downy mildew of Bajara caused by
- a) Sclerospora sorghi
 - b) Sclerospora graminicola
 - c) Sclerospora philippinesis
 - d) Plasmapara viticola
41. The phase contrast microscope was developed by
- a) Leeuwenhoek
 - b) Robert Hook
 - c) Zernike
 - d) Ornstein
42. Fluorescent dye acridine orange gives fluorescence for DNA.
- a) red
 - b) yellow
 - c) green
 - d) violet
43. Crossing-over takes place in
- a) leptotene
 - b) zygotene
 - c) pachytene
 - d) diplotene

44. During the cell cycle, genetic material is copied and its complete extra set is produced in phase
- a) Gap 1
 - b) Synthesis
 - c) Gap 2
 - d) Mitosis
45. Peptidoglycans are present in the cell wall of
- a) virus
 - b) bacteria
 - c) algae
 - d) bryophytes
46. Which lens in an electron microscope is used to control and focus the beam of electrons.
- a) Convex lenses
 - b) Concave lenses
 - c) electromagnetic lenses
 - d) graphite lenses
47. cell organelles plays important role in cellular transport.
- a) golgi complex
 - b) ribosomes
 - c) lysosomes
 - d) ectoplasm
48. Ribosomes of bacterial cell are of
- a) 80s
 - b) 70s
 - c) 60s
 - d) 50s
49. Scanning electron microscope can be used to study
- a) Structure of virus and elemental analysis of samples
 - b) Structure and function of enzyme
 - c) Live imaging and process of cell division
 - d) both a and c

50. Patents are legal rights issued to an inventors for period of years.
- a) 5
 - b) 10
 - c) 20
 - d) 30
51. 'Goottee' is an example of
- a) grafting
 - b) air layering
 - c) budding
 - d) cutting
52. is referred as father of 'Pomology'.
- a) Thophrastus Charles
 - b) Sir Dalton Hooker
 - c) Charles Dowing
 - d) Carl Linnaeus
53. Study of cultivation of tress is referred as
- a) floriculture
 - b) arboriculture
 - c) viticulture
 - d) sericulture
54. Bermuda grass is commonly used in preparation of
- a) hedges
 - b) edges
 - c) luxury lawns
 - d) cut greens

55. Duranta plants are used asin garden.
- a) avenue
 - b) edges
 - c) hedges
 - d) arches
56. Black spot disease of Rose is caused by
- a) Diplodia rosarum
 - b) Sphaerotheca rosae
 - c) Diplocarpon rosae
 - d) Peronospora rosarum
57. Anthracnose of Gerbera is caused by
- a) Diplodia rosarum
 - b) Collectotichm fulcatum
 - c) Diplocarpon parvum
 - d) Colletotrichum gloeosporioides
58. Removal of the terminal portion of a plant is called as.....
- a) Thinning
 - b) grafting
 - c) pruning
 - d) desuckering
59. Marigold is native to
- a) China
 - b) USA
 - c) South Africa
 - d) Australia
60. Brindavan garden is situated on the river
- a) Ganga
 - b) Krishna
 - c) Kaveri
 - d) Yamuna

61. is not digested by the digestive enzymes of man and therefor forms the bulk or roughage of food.
- a) Starch
 - b) Cellulose
 - c) Protein
 - d) Lipid
62.is a linear chain of glucose molecules attached by α - 1, 4 linkage.
- a) amylose
 - b) dextrin
 - c) amylopectin
 - d) achroodextrin
63. A disaccharide linked by α -1-4 glycosidic linkages is
- a) Lactose
 - b) Sucrose
 - c) Cellulose
 - d) Maltose
64. Complete oxidation of 1 gram of lipid yields energy.
- a) 4 Kcal
 - b) 9.3 Kcal
 - c) 9.4 Kcal
 - d) 9.7 Kcal
65. form of lipids are also referred as neutral lipids.
- a) Triacylglycerol.
 - b) Steroid
 - c) Phospholipids
 - d) Wax

66. carries the amino acids from amino acid pool to mRNA during protein synthesis.
- a) r-RNA
 - b) m-RNA
 - c) t-RNA
 - d) hn-RNA
67. Proline is a amino acid.
- a) basic
 - b) acidic
 - c) hydrophobic
 - d) hydrophilic
68. Anticodon is located on
- a) t- RNA
 - b) mRNA
 - c) r-RNA
 - d) DNA
69. According to Chargaff's rule, in a DNA molecule
- a) The amount of adenine and thymine is equal to amount of guanine and cytosine
 - b) The amount of adenine and guanine is equal to amount of thymine and cytosine
 - c) The amount of adenine and uracil is equal to the amount of guanine and cytosine
 - d) The amount of adenine and guanine is equal to the amount of uracil and cytosine
70. The has a left handed helix.
- a) M-RNA
 - b) T-RNA
 - c) A-DNA
 - d) Z-DNA
71. The first Bioinformatics database was created by
- a) Richard Durbin
 - b) Pearson
 - c) Margaret Dayhoff
 - d) Michael. J. Dunn

72. Margaret Dayhoff developed the first protein sequence database called
- a) SWISS PORT
 - b) PDB
 - c) Atlas of protein sequence and structure
 - d) Protein sequence databank
73. is a sequence alignment tool provided by NCBI.
- a) Chim
 - b) BLAST
 - c) FASTA
 - d) Clustal W
74. The term variance was first used by
- a) A. R. Fisher
 - b) Karle Person
 - c) Gossett
 - d) R. A. Fisher
75. Mean of chi-square distribution is denoted by
- a) $2n$
 - b) χ^2
 - c) χ
 - d) η
76. Find out the odd term from the following:
- a) range
 - b) arithmetic mean
 - c) deviation
 - d) error
77. Nipping in chick pea is a process
- a) To increase the branching
 - b) To reduce plant height
 - c) To protect plants against lodging
 - d) To reduce the root length
78. Soybean seeds contain
- a) 20% oil and 20% protein
 - b) 40% oil and 40% protein
 - c) 40% oil and 20% protein
 - d) 20% oil and 40% protein

79. The bioflavonoid in tea are derived by the condensation reaction of
with 3 melonyl Co A groups.
- a) Cinnamic acid
 - b) Tannic acid
 - c) Acetic acid
 - d) Nicotinic acid
80. Black pepper is responsible for the improvement of function.
- a) Digestion
 - b) Reproduction
 - c) Respiration
 - d) Secretion
81. Cosmid vectors are
- a. plasmids that contain fragment of λ DNA including the cos site
 - b. phages that lack cos site
 - c. plasmids that have no selection marker.
 - d. cryptic plasmids
82. Southern Blot is used to detect
- a) DNA
 - b) RNA
 - c) Proteins
 - d) Chromosomes
83. The unwinding and separation of DNA strand achieved with the help of enzymes
- a. Topoisomerase
 - b. ligase
 - c. amylase
 - d. Nitrogenease

84. Genomic library can be prepared by
- a) PCR technique
 - b) shotgun experiment
 - c) colony hybridization
 - d) subtractive hybridization
85. Plasmids are used as cloning vectors for which of the following reasons?
- a. Can be multiplied in culture
 - b. Self-replication in bacterial cells
 - c. Can be multiplied in laboratories with the help of enzymes
 - d. Replicate freely outside bacterial cells
86. Which of the following is used for the production of cDNA?
- a) DNA polymerase
 - b) Reverse transcriptase
 - c) Endonucleases
 - d) Ligases
87. In tissue culture of parenchyma, mitosis is accelerated in the presence of
- a) Auxin
 - b) Cytokinin
 - c) Gibberellin
 - d) Both a and b
88. Any DNA molecule that has ability to replicate in an appropriate hostcell, to which the desired gene are integrated for cloning is called as
- a) plasmid
 - b) linker
 - c) vector
 - d) adapter

89. Cupulate seeds of Lyginopteris are known as
- a) Spenopteris
 - b) Enigmocarpon
 - c) Telangium
 - d) Laginostoma
90. era is known as 'Age of Angiosperms'
- a) Paleozoic
 - b) Mesozoic
 - c) Coenozoic
 - d) Archezoic
91. Nitrogen fixing BGA fix the atmospheric nitrogen with the help of
- a) Oidea
 - b) Heterocyst
 - c) Chlamyospores
 - d) akinets
- 92.. is associated with fern Azolla and fix the atmospheric nitrogen.
- a) *Anabaena*
 - b) *Haplosiphon*
 - c) *Oscillatoria*
 - d) *Scytonema*
93. Vesicular-arbuscular mycorrhiza (VAM) is formed by the symbiotic association between certain phycomycetous fungi and roots.
- a) Angiospermic
 - b) Petridophytes
 - c) Agae
 - d) Bryophytes

94. Nitrogen fixing bacteria Rhizobium is
- a) Gram negative, motile and rod shaped
 - b) Gram negative non motile and spiral shaped
 - c) Gram positive, motile and rod shaped
 - d) Gram positive non motile coma shaped
95. The ectomycorrhizas are commomly formed in
- a) herbaceous plants
 - b) woody plants
 - c) climbers
 - d) grasses
96. The drug which is obtained from the plants, animals and bacteria or any natural resources to cure the diseases in the humans and animals are called
- a) modified drugs
 - b) crude drugs
 - c) synthetic drugs
 - d) Bhasma
97. Alkaloid named as Trigonelline is present in
- a) Tamarind
 - b) Fenugreek
 - c) Datura
 - d) Vinca
98. *Ocimum sanctum* belongs to the family
- a) Lamiaceae
 - b) Solanaceae
 - c) Cucurbitaceae
 - d) Caesalpinaceae

99. *Sapindus laurifolius* is commonly used for the preparation of

- a) dyes
- b) perfumes
- c) shampoo
- d) beauty cream

100. is a hair dye plant.

- a) *Cucumis sativus*
- b) *Lawsonia inermis*
- c) *Santalum album*
- d) *Jasminum sambac*

