





The Maharaja Sayajirao University of Baroda Faculty of Science

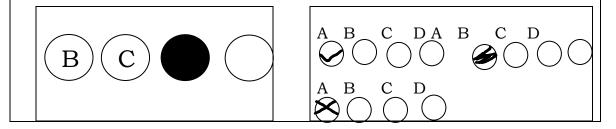
M.Sc. ENTRANCE EXAMINATION

SUBJECT: Botany DAY: Monday TIME : 10.00-11.30 AM DATE :4th July 2022

Important Instructions:

- 1. This test booklet is to be opened only when instructed by the invigilators to do so.
- 2. This booklet carries 100questions in 8 printed pages. All carry equal marks.
- 3. For every correct answer, candidate will earn 1 mark, for every wrong answer 25% mark will be deducted.
- 4. Test Registration Number must be entered correctly in the OMR answer sheet, as advised by the invigilators. The Question Booklet code (A/B/C/D) must also be mentioned on the OMR answer sheet (if not printed already) as instructed.
- 5. Answers must be marked in the OMR answer sheet using a black or dark blue ball point pen only. The circle should be filled in completely, leaving no gaps.
- 6. Gadgets (Mobile phones, pagers, ear phones, music players, calculators smart watches etc.) are strictly prohibited in the exam hall. If any candidate is found in possession of any of these at his/her exam seat, he/she is liable to be disqualified.
- 7. In case of tie in the marks the merit will be considered based on total marks in qualifying examination.

Correct way of marking answer: Incorrect way of marking answer:



Invigilator's Signature: ____

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA Department of Botany

M.Sc. ENTRANCE EXAMINATIONS 2022

Day: Monday

Date:4thJuly 2022 Time: 10 am – 11.30 am

Marks: 100

Note: 1. Write your answers in the given OMR sheet.

2. There is negative marking in this examination. For each wrong answer 0.25 marks will be deducted.

1x100=100 Marks

1. Presence of gynophoric flower with 6 to m	any stamens is a character of			
a) Sterculiaceae	c) Capparidaceae			
b) Mimosaceae	d) Tiliaceae			
2. Meliaceae is distinguished from related tax	xa by			
a) Stamina tube	c) discoid stigma			
b) Lack of resin producing ducts	d) All the above			
3. Family Sterculiaceae is distinguished by	v usually monoadelphous stamens that differ from			
Malvaceae in being				
a) Monothecous stamens	c) Dithecous stamens			
b) Petaloid stamens	d) None of the above			
4. Some plants renowned for survival in harsh semi-desert and can grow in sand or even on				
rocks				
a) Conifers	b) Ptreidosperms			
c) Cycads	d) Ginkgoales			
5 the 'plant of imm	nortality' by the ancient Egyptians, was used for its			
healing properties since time immemorial.It	is an ingredient in many cosmetics because it heals			
moisturizes, and softens skin. Simply cut one	of the leaves to easily extract the soothing gel.			
. a) <i>Lawsoniainermis</i>	b) Azadirachtaindica			
c) Aloe barbadensis	d) Artemisia scoparia			
6. Early Life on the mother earth is always co	onsidered to be			
a) Chemical	b) Physical			
c) Physiological	d) Social			
7. Sydney fox has described the evolution of membrane with the help of				
a) Chemicals	b) physical			
c) coacervates	d) protenoids			
8. Use and disuse theory can be explained by	the examples of			
a) Development of muscles	b) development of intelligence			
c) Elongation of neck of Giraffe	d) chopping the tails of rats			
9. With the help of the immunoassay studies we are able to gather information for				
a) Evolution	b) Systematics			
c) Species	d) Life			

10. Name the organization of the Gujarat state which works for the inventorization documentation and conservation of the wildlife and natural resources

a) Geer foundation

b) GUIDE

c) Forest department

d) Gujarat biodiversity Board

11. Can you name the species that helps define an entire ecosystem without which the ecosystem would be dramatically different or cease to exist altogether as well as it has low functional redundancy.

a) cenospecies b) keystone species

c) variety

d) neospecies

12. Climate change studies and implementation of the Convention and any other legal instruments that adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.

a) NBA b) GBB c) COP d) MBB 13. One of the strands of double-stranded, 10kbp DNA duplex has the following numbers of base residues: Adenine (A) -3800, Thymine (T) -2600. The base composition of the whole double stranded molecule will be a) A-5200, T-5200, G-4800, C-4800 b) A-7600, T-7600, G-2400, C-2400 c) A-6400, T-3600, G-6400, C-3600 d) A-6400, T-6400, G-3600, C-3600 14. The structure of alfa-helix and beta-sheet were first elucidated by b) G. N. Ramachandran a) Linus Pauling b) C. V. Venktraman d) Francis Crick 15. Relationship between organisms of different species in which one organism is inhibited or destroyed while the other organism remains unaffected is known as _____ a) Amensalism b) Parasitism c) Commensalism d) Mutualism 16. Common target for antibiotics in bacteria is? a) Microsome b)Mesosome c) Ribosomes d) Plasmid 17. Protein synthesis is carried out by _____ a) Golgi body b) Smooth E R c) Rough E R d)Chloroplast 18. Of the following parts of a cell listed below, name the part that is common to plant cell, animal cell and a bacterial cell. a) chloroplast b) cell membrane c) cell wall d) nucleus 19. Among the following the most variable stage of cell cycle is a). G1 b). S c). G2 d). M 20. Which of these is a storage polysaccharides of animals? b). Glycogen a). Starch c). Heparin d). Hemicellulose 21. Viruses are essentially made up of _____ a) Nucleic acids and Proteins b) Lipids and Proteins c) Carbohydrates and Proteins d) Carbohydrates and Lipids 22. Under dry conditions wall of Fern sporangia bursts at _____ to release spores b) Annulus d) Ostiole a) Jacket layer c) Srtomium 23. Mendel proposed which of the following term for hereditary units? a) Factor b) Genome c) Genetic particle d) None of these

24. What type of gametes		•				
			d) Rr,RR,Yy,YY			
25. Who is the father of T		\ T ' 1 1				
,	b) Haberlandt	c)Laibach	d)Gautheret			
26. Cybrids are produced		1.00				
·	fferent nuclei from two					
	me nuclei from same s					
	c) Nucleus from one species but cytoplasm from both species					
d) None of the abo						
27. Which vector is mostly	• •	-				
a) Plasmid b) c	osmia c) Pr	asmid d) A	grobacterium			
28. Organogenesis is	llug tigging (b) Er	weating of used and all				
· ·	llus tissue b) Fo		loot on callus tissue			
c) both (a) and (b)		enesis of organ				
29. Opposite decussate ph	-	 c) Hibiscus	d) Nerium			
a)Calotropis b) N	•	,	a) Nerium			
30. Flowers are sessile in			d) Spiles			
a) Corymb	b)Raceme	c) Umbel	d) Spike			
31. Unisexual flowers are	found in family					
a) Malvaceae	b) Solanaceae	c) Cucurbitaceae	d) None of these			
32. Placentation in Cucur	bitaceae is					
a) Parietal	b)Axile	c) Basal	d) Marginal			
33. RNA polymerase II is	involved in the transcri	ption of				
a) t RNA genes b) r RNA genes c) all protein genes d) sn RNA genes						
34. One gene one enzyme hypothesis was proposed by						
a) Lederberg b) Beadle and Tatum c) Garrod d) Francis crick						
35. When two or more fru		e flower they are called	d			
a) Composite fruits		b) Aggregate fruits				
c) Edible fruits d) All the above						
36 is defined as maximum displacement of wave from equilibrium, represented by						
crest and troughs of curvature produced.						
a) Amplitude	-	b) Wave frequency				
c) Refractive index d) Refraction						
37. The change of position involving inversion and twisting of xylem strands from exarch to						
endarch type is known as						
a) Root-stem trans	location	b) Root-stem transfe	ormation			
c) Root-stem trans	tion	d) All the above				
38. In <i>Cucurbita pepo</i> fruit shape is controlled by						
a) dominant genes b) recessive genes c) duplicate genes d) epistasis						
39. Beta vulgaris the food is stored in napiform root a underground structure then can you						
explain the position of preparation of food?						
a) shoot	b) leaves	c)stem	d) flower			

40. In plants flower colour is due to the presence of anthocyanin but in *Batrachospermum* the red colour is due to

a) chlorophyll a b) xanthophylls c) caoumarins d) phycoerythrin 41. In most simple and primitive type of embryo sac is noticed in Polygonum and developed from chalzal end falls under a) Bisporic eight nucleate b) Monosporic four nucleate c) Tetrasporic sixteen nucleate d)Monosporic eight nucleate. 42. How does centrifugation work? a) Through spinning b) By keeping small particles in the center and larger on the outside c) By keeping large particles in the center and smaller on the outside d) By separating particles into different tubes 43. Bixin a natural dye is recovered from _____ a) Flowers b) Seed c) Stem d) Bark 44. Components which have small value of K have affinity for a) mobile phase b) stationary phase c) no phase d) solution 45. Pencillin was first time identified by? a) Florey & Chain b) Alexander Flemings c) G. Brotzu d) Selman Wakasman 46. Wheat originated from _____ ____ centre. b)Mexico-Guatemala a) Indian c) Mediterranean d) African 47. Arecanut in botanical term is a) Drupe b) nut c) pod d) berry 48. Pegion pea scientifically known as *Cicer____* a) *vulgaris* b) *unguiculata* d) *culanaris* c)*arietinum* 49. _ _____ is a national tree of Thailand a) Butea monosperma b) Cassia fistulosa c) Saracaindica d) Cassia renigera 50. Endosperm culture is used to produce a) Diploid plants b) Endospermic plants c) Haploid plants d) Triploid plants 51. Dolipore septa is found in members of a). Zygomycetes b). Ascomycetes c). Basidiomycetes d). Oomycetes 52. Rust disease is caused by a). *Magnaportheoryzae* b). Pucciniagraminis c). *Phytophthorainfestans* d). *Alternariasolani* 53. Which of the following shows heterocyst? a).*Nostoc* b). Sargassum d). Oscillatoria c). *Ulothrix* 54. Girdle shaped chloroplast is present in_ a). Sargassum b). *Ulothrix* c). *Nostoc* d). Oscillatoria 55. Equisetum belongs to ____ Division. a). Psilophyta b). Lycophyta c). Calamophyta d). Filicophyta

56. Formation of bulbils for vegetative reproduct	ion is seen in			
a). <i>Cycas</i> b). <i>I</i>	b). <i>Equisetum</i>			
	c). Funaria d). Psilotum			
57. Archebacteria found in salt marshes are called		_		
a). Methanogens b). Thermoacidoph	=	d). None of the above		
58. Which of the following division contain starc				
a). Cyanophyta b). Phaeophyta	c). Rhodophyta	d). Chlorophyta		
59. Which tree gives out the latex to obtain natur				
a) Eucalyptus volubilis	b) Heveabrasilensis			
c) Anogeissuslatifolia	d)Ficusracemosa			
60. The most suitable species for making bio-die	sel is			
a) Pine b) Castor	c) Mustard	d) Jatropha		
61. Bacterial cell wall is composed of				
· · · · · · · · · · · · · · · · · · ·	Chitin			
c) Mannose d) P	eptidoglycan			
62. What is known as sporophyte in <i>Riccia</i> ?				
a) Capsule b) Foot and Capsule c) F	· •	d) only foot		
63. Which of the following member is heterospor				
	c) Selaginella	d)Psilotum		
64. Spore bearing organ of Psilotum is known as				
a) Sori b) Synangium	c) Cone	d) Strobilus		
65. CoVID-19 is which type of Virus?				
a) RNA b) DNA	c) Both RNA & DN	A d) None of the above		
66. Shanon index is used to measure				
a) Eveness b) Richness	c) Both a & b			
67. The interaction which is observed between Epiphytes and host plant is				
· · · · ·	c) Commensalism	d) parasitism		
68. When a cell is placed in hypotonic solution, the cell become				
a) Plasmolysis b) plamolysed	c) Flaccid	d) Turgid		
69. Who is father of Indian Taxonomy	\sim C L \sim			
	c) C. Linnaneus	d) M.S Swaminathan		
70. Which phase of photosynthesis does not require light?a) Photophosphorylationb) carbon assimilation				
c) Electron transport chain d) None of the above 71. In C4 plants, the cells which do not possess chlorophyll is known as				
	· -	d) Spongy		
72 belongs to dicot which has the largest leaf.				
a) Cocolobagiantifolia b) Magnolia grandiflora				
c) <i>Tectonagrandis</i> d) <i>Pterygotaalata</i> 73 is an endemic disease				
a) Citrus canker c) little leaf of brinjal				
b) TMV	d) Wart disease of p			
<i>Uj</i> 11VI V	u) wan uisease of p	Jaio		

74. The organism *Trichoderma* is used as a) Phosphate fertilizer c) Growth hormone b) Antagonist d) Edible fungus 75. In absence of specific host, if a pathogen starts growing on other alternative host for its survival, such pathogen is called as a) Facultative parasite b) Obligate parasite c) Pseudo-parasite d) Nonspecific parasite 76. Due to the presence of pathogen, when a cell fails to carry out its normal function and dies. Such state is said to be... a) Abnormal b)Symptomatic c) Asymptomatic d) Diseased 77. Haploid infect alternative host barberry c) Teleutospore a) Urediospore b)Aecidiospore d) basidiospores 78. The presence of a ______ type of pit is especially characteristics of most of Coniferales. c) Bordered pit a) Torus b)Simple pit d) Vestured pi 79. ______is responsible for preventing the folding of the cellulose microfibrils in plant cell wall. a) Lipids b) Lignin c) Hemicelluloses d) protein 80. One of the main component of cell wall is cellulose ad the molecule of cellulose consist of long chain of _____ residues. a) Glucose c) phospholipids b)lipids d) polysaccharids 81. The protective layer developed during the secondary growth of the stem is called... b) Periderm a) Epidermis c) Rhizodermis d) Phellogen 82. The change from meristematic tissue to permanent tissue is called... a) Differentiation. b) Self-perpetuating d) Cell division c) Photosynthesis. 83. Phloem that is embedded within the secondary xylem is called _____ phloem. b) Intraxylary c) Interxylary d)Medullary a) Internal 84. Movement of water and minerals into the vascular column of a root is controlled by ... c) Vascular cambium d) Endodermis b) Spongy mesophyll cells a) Stomata 85. among the following would be having the lowest intrinsic rate of growth 'r'. b) grasses c) bacteria d) unicellular alage a) Large trees 86. Which biome is characterized by low temperature and low precipitation? b) Subtropical desert c) Temperate grassland d) Tundra a) Savannah 87. The ocean currents move in a clockwise manner in the _____ a) Northern Hemisphere b) Southern Hemisphere c) Antarctic ocean d) Equator 88. Which plant hormone was also initially known as Dormin? a) Kinetin b) Dihydrozeatin c) ABA d) Zeatin 89. Which of the following enzyme is not involved in the C 3 cycle? a) RUBISCO b) Aldolase c) fructose 1,6, biphosphatase d) Amylase

90. Plants are multicellular eukaryotes with tissue systems made of various cell types that carry out specific functions. Plant tissues are mostly composed of cells which are in response and perform a specific _____. a) similar and function b) dissimilar and function c) functional and similar d) Functional and dissimilar 91. What kind of bonds are always broken after an introduction of Endonucleases a) Covalent bond b) hydrogen bond c) both d) none 92. An organism which has mechanisms to protect themselves from their own restriction enzymes a) Plants c) viruses b) Animals d) Bacteria 93.A sequencing Method which requires DNA synthesis and termination of chain elongation a) Chemical b) physical c) enzymatic d) natural 94. ADNA must be transferred onto a support for further analysis a) Nitrocellulose paper b) Nylon paper c) Cloth d) plastic paper 95. Gene of known function and location in a genome is known as a) segment b) syndrome c) marker d) stretch 96. The scoring of bands are open for interpretation and results are not easily reproducible between laboratories a) AFLP b) RFLP c) SSR d) RAPD 97. Genetic information is stored in the of nucleotides in DNA. a) order b) chain c) beads d) knots 98. Name with no accompanying description is called as a) Tutonym c) *Nomennudum* b) Homonym d) Later homonym 99. Tri-seriate perianth and multi-pistilate, apocarpus gynoecium is character of a) Rutaceae c) Sterculiaceae b) Myrtaceae d) Anonaceae 100. Family is characterized by leaf opposed inflorescence and terminal bud developing into tendril a) Vitaceae c) Verbenaceae d) None of the above b) Mimosaceae

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