

Test Registration No. _____



The Maharaja Sayajirao University of Baroda Faculty of Science

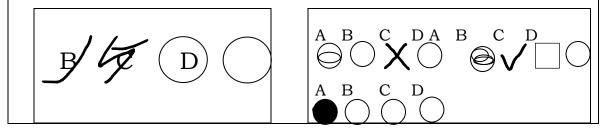
M.Sc. ENTRANCE EXAMINATION

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. 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

c) variety

2. 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.			
b) GBB	c) COP	d) MBB	
ouble-stranded, 1	0kbp DNA du	uplex has the foll	owing numbers of base
800, Thymine (7	Г) -2600. The	base composition	on of the whole double
	b) GBB ouble-stranded, 1	b) GBB c) COP ouble-stranded, 10kbp DNA du 800, Thymine (T) -2600. The	b) GBB c) COP d) MBB ouble-stranded, 10kbp DNA duplex has the foll 800, Thymine (T) -2600. The base composition

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

4. The structure of alfa-helix and beta-sheet were first elucidated by

a) Linus Pauling	b) G. N. Ramachandran

b) C. V. Venktraman d) Francis Crick

5. 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	
6. Common target for antibio	otics in bacteria is?		
a) Microsome b)Mes	sosome c) Ril	oosomes	d) Plasmid
7. Protein synthesis is carrie	ed out by		
a) Golgi body	b) Smooth E R	c) Rough E R	d)Chloroplast
8. Of the following parts of a cell listed below, name the part that is common to plant cell,			
animal cell and a bacteri	al cell.		
a) chloroplast	b) cell membrane	c) cell	wall d) nucleus
9. Among the following the most variable stage of cell cycle is			
a). G1	b). S	c). G2	d). M
10. Which of these is a storage polysaccharides of animals?			
a). Starch	b). Glycogen	c). Heparin	d). Hemicellulose

11. Viruses are essentially made up of		
a) Nucleic acids and Proteins	b) Lipids and Proteins	
c) Carbohydrates and Proteins	d) Carbohydrates an	d Lipids
12. Under dry conditions wall of Fern sporangia b	ursts at to relea	se spores
a) Jacket layer b) Annulus	c) Srtomium	d) Ostiole
13. Mendel proposed which of the following term	for hereditary units?	
a) Factor b) Genome	c) Genetic particle	d) None of these
14. What type of gametes will form by genotype R	rYy	
a) RY,Ry,rY,ry b) RY,Ry,ry,ry c) Ry,R	y,Yy,ry d) Ri	r,RR,Yy,YY
15. Who is the father of Tissue culture?		
a) Bonner b) Haberlandt c)Lait	bach d)Gau	utheret
16. Cybrids are produced by		
a) Fusion of two different nuclei from two	different sources	
b) Fusion of two same nuclei from same sp	ecies	
c) Nucleus from one species but cytoplasm	from both species	
d) None of the above		
17. Which vector is mostly used for transgenic plan	nt production ?	
a) Plasmid b) cosmid	c) Phasmid	d) Agrobacterium
18. Organogenesis is		
a) Formation of callus tissue b) For	mation of root and sh	oot on callus tissue
c) both (a) and (b) d) ger	nesis of organ	
19. Opposite decussate phyllotaxy is found in		
a)Calotropis b) Mango	c) Hibiscus	d) Nerium
20. Flowers are sessile in inflore	scence	
a) Corymb b)Raceme	c) Umbel	d) Spike
21. Unisexual flowers are found in family		
a) Malvaceae b) Solanaceae	c) Cucurbitaceae	d) None of these
22. Placentation in Cucurbitaceae is	a) Dagal	d) Manainal
a) Parietal b)Axile	c) Basal	d) Marginal
23. RNA polymerase II is involved in the transcrip		d) on DNA conce
	all protein genes	d) sn RNA genes
24. One gene one enzyme hypothesis was proposed	-	d) Enon ois anials
a) Lederberg b) Beadle and Tatum	c) Garrod	d) Francis crick
25. When two or more fruits develop from a single	2	I
a) Composite fruits	b) Aggregate fruitsd) All the above	
c) Edible fruits	, ·	ulibrium ronrogantad by
26 is defined as maximum displacen crest and troughs of curvature produced.	nent of wave nom eqt	monum, represented by
a) Amplitude	b) Wave frequency	
c) Refractive index	d) Refraction	
c) Reffactive much	u) Kellacuoli	

27. The change of position involving inversion and twisting of xylem strands from exarch to endarch type is known as... a) Root-stem translocation b) Root-stem transformation c) Root-stem transition d) All the above 28. In Cucurbita pepo fruit shape is controlled by a) dominant genes b) recessive genes c) duplicate genes d) epistasis 29. Beta vulgaris the food is stored in napiform root a underground structure then can you explain the position of preparation of food?. d) flower a) shoot b) leaves c)stem 30. 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 31. In most simple and primitive type of embryo sac is noticed in Polygonum and developed from chalzal end falls under b) Monosporic four nucleate a) Bisporic eight nucleate c) Tetrasporic sixteen nucleate d)Monosporic eight nucleate. 32. 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 33. Bixin a natural dye is recovered from a) Flowers b) Seed c) Stem d) Bark 34. Components which have small value of K have affinity for a) mobile phase b) stationary phase c) no phase d) solution 35. Pencillin was first time identified by? a) Florey & Chain b) Alexander Flemings c) G. Brotzu d) Selman Wakasman 36. Wheat originated from centre. a) Indian b)Mexico-Guatemala c) Mediterranean d) African 37. Arecanut in botanical term is a) Drupe b) nut c) pod d) berry 38. Pegion pea scientifically known as Cicer___ b) *unguiculate* a) *vulgaris* c) *arietinum* d) *culanaris* 39. _____ is a national tree of Thailand a) Butea monosperma b) Cassia fistulosa c) Saracaindica d) Cassia renigera 40. Endosperm culture is used to produce a) Diploid plants b) Endospermic plants c) Haploid plants d) Triploid plants 41. Dolipore septa is found in members of a). Zygomycetes d). Oomycetes b). Ascomycetes c). Basidiomycetes 42. Rust disease is caused by a). *Magnaporthe oryzae* b). *Puccinia graminis* c). *Phytophthora infestans* d). Alternaria solani

43. Which of the following	g shows heterocyst?		
a). <i>Nostoc</i>	b). Sargassum	c). Ulothrix	d). Oscillatoria
44. Girdle shaped chloropl	ast is present in		
a). Sargassum	b). Ulothrix	c). Nostoc	d). Oscillatoria
45. Equisetum belongs to _		Division.	
a) Psilophyta	b) Lycophyta	
c) Calamophyta	d) Filicophyta	
46. Formation of bulbils for	or vegetative reprodu	action is seen in	·
a).Cycas	b). Equisetum	
c). Funaria	d). Psilotum	
47. Archebacteria found in	salt marshes are cal	lled	-
a). Methanogens	b). Thermoacido	phile c). Halophiles	d). None of the above
48. Which of the following	g division contain sta	arch as reserve material?	
a). Cyanophyta	b). Phaeophyta	c). Rhodophyta	d). Chlorophyta
49. Which tree gives out t	he latex to obtain na	tural rubber?	
a) Eucalyptus volul	bilis	b) Hevea brasilensis	
c) Anogeissus latife	olia	d)Ficus racemosa	
50. The most suitable spec	ies for making bio-d	liesel is	
a) Pine	b) Castor	c) Mustard	d) Jatropha
51. Bacterial cell wall is c	omposed of		
	b) Chitin		
c) Mannose	d) Peptid	loglycan	
52. What is known as spor	ophyte in <i>Riccia</i> ?		
) Foot, seta and capsule	d) only foot
53. Which of the following			
a) <i>Riccia</i>	b) Nephrolepis	c) Selaginella	d)Psilotum
54. Spore bearing organ of	Psilotum is known	as	
a) Sori	b) Synangium	c) Cone	d) Strobilus
55. CoVID-19 is which typ	pe of Virus?		
a) RNA	b) DNA	c) Both RNA & DNA	A d) None of the above
56. Shanon index is used to	o measure		
a) Eveness	b) Richness	c) Both a & b	d) Interaction
57. The interaction which	is observed between	Epiphytes and host plant i	S
a) Mutualism	b) Ammensalism	n c) Commensalism	d) parasitism
58. When a cell is placed	in hypotonic solutio	n, the cell become	
a) Plasmolysis	b) plamolysed	c) Flaccid	d) Turgid
59. Who is father of India	n Taxonomy		
a) N. Wallich	b) W. Roxburgh	c) C. Linnaneus	d) M.S Swaminathan
60. Which phase of photos	ynthesis does not re	quire light?	
a) Photophosphory	lation b) carbon assimilation	
c) Electron transpo	rt chain d) None of the above	

61. In C4 plants, the cells which do not possess chl	orophyll is known as	
a) Bundle sheath b) Mesophyll		
62 belongs to dicot which has the larges	· 1	., .,
a) Cocoloba giantifolia b) Magnolia g		
c) Tectona grandis d) Pterygota		
63 is an endemic disease		
	c) little leaf of brinjal	1
a) Citrus cankerb) TMV	d) Wart disease of po	
64. The organism <i>Trichoderma</i> is used as		
	c) Growth hormone	
b) Antagonist d) Edi	ble fungus	
65. In absence of specific host, if a pathogen sta	-	alternative host for its
survival, such pathogen is called as		
	h) Obligate parasite	
c) Pseudo-parasite	b) Obligate parasited) Nonspecific parasite	ite
66. Due to the presence of pathogen, when a cell f		
Such state is said to be	·	
a) Abnormal b) Symptomatic	c) Asymptomatic	d) Diseased
67. Haploid infect alternative host barber		
a) Urediospore b) Aecidiospore	-	d) basidiospores
68. The presence of a type of pit is especial	_	_
a) Torus b)Simple pit c) Bor		
69is responsible for preventing the foldi		
wall.	6	1
a) Lipids b) Lignin c) Her	nicelluloses	d) protein
70. One of the main component of cell wall is cell	lulose ad the molecule	e of cellulose consist of
long chain of residues.		
a) Glucose b)lipids c) pho	ospholipids d) pol	ysaccharids
71. The protective layer developed during the second	ndary growth of the ste	em is called
a) Epidermis b) Periderm	c) Rhizodermis	d) Phellogen
72. The change from meristematic tissue to perman	ent tissue is called	
a) Differentiation. b) Sel	f-perpetuating	
c) Photosynthesis.	d) Cell division	
73. Phloem that is embedded within the secondary	xylem is called	_phloem.
a) Internal b) Intraxylary	c) Interxylary	d)Medullary
74. Movement of water and minerals into the vascu	lar column of a root is	controlled by
a) Stomata b) Spongy mesophyll cells	c) Vascular cambiun	n d) Endodermis
75 among the following would be l	having the lowest intri-	nsic rate of growth 'r'.
a) Large trees b) grasses	c) bacteria	d) unicellular alage
76. Which biome is characterized by low temperatu	,	, C
a) Savannah b) Subtropical desert		
a) Savaman 0) Subiropical desert	c) remperate grassia	nu ujiunula

77. The ocean currents move in a clockwise manne	
a) Northern Hemisphere b) Southern H	
78. Which plant hormone was also initially known	
, , , .	atin c) ABA d) Zeatin
79. Which of the following enzyme is not involved	
a) RUBISCO	b) Aldolase
c) fructose 1,6, biphosphatase	d) Amylase
80. Plants are multicellular eukaryotes with tissue	• • • • •
out specific functions. Plant tissues are mostly co	imposed of cells which are in response
and perform a specific	h) dissimilar and function
a) similarand function	b) dissimilar and functiond) Functional and dissimilar
c) functional and similar81.What kind of bonds are always broken after an i	·
a) Covalent bond b) hydrogen bond	
82. An organism which has mechanisms to pro-	, , , , , , , , , , , , , , , , , , , ,
enzymes	
a) Plants b) Animals	c) viruses d) Bacteria
83.A sequencing Method which requires DNA synt	
a) Chemical b) physical	c) enzymatic d) natural
84. ADNA must be transferred onto a	
a) Nitrocellulose paper b) Ny	
	astic paper
85. Gene of known function and location in a genor	
a) segment b) syndrome 86.The scoring ofbands are open for	
reproducible between laboratories	interpretation and results are not easily
a) AFLP b) RFLP	c) SSR d) RAPD
87. Genetic information is stored in the	. of nucleotides in DNA.
a) order b) chain	c) beads d) knots
88. Name with no accompanying description is call	, , , , , , , , , , , , , , , , , , ,
a) Tutonym	c) Nomen nudum
b) Homonym	d) Later homonym
89. Tri-seriate perianth and multi-pistilate, apocarp	•
a) Rutaceae	c) Sterculiaceae
b) Myrtaceae	d) Anonaceae
90. Family is characterized by	
developing into tendril	
a) Vitaceae	c) Verbenaceae
b) Mimosaceae	d) None of the above
91. Presence of gynophoric flower with 6 to many	stamens is a character of
a) Sterculiaceae	c) Capparidaceae
b) Mimosaceae	d) Tiliaceae

92. Meliaceae is distinguished from related taxa by a) Stamina tube c) discoid stigma b) Lack of resin producing ducts d) All the above 93. Family Sterculiaceae is distinguished by usually monoadelphous stamens that differ from Malvaceae in being a) Monothecous stamens c) Dithecous stamens b) Petaloid stamens d) None of the above 94. 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 95. _____ the 'plant of immortality' 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) *Lawsonia inermis* b) Azadirachta indica . d) Artemisia scoparia c) Aloe barbadensis 96. Early Life on the mother earth is always considered to be a) Chemical b) Physical c) Physiological d) Social 97. Sydney fox has described the evolution of membrane with the help of a) Chemicals b) physical d) protenoids c) coacervates 98. 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 99. With the help of the immunoassay studies we are able to gather information for a) Evolution b) Systematics c) Species d) Life 100. 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

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