





The Maharaja Sayajirao University of Baroda Faculty of Science

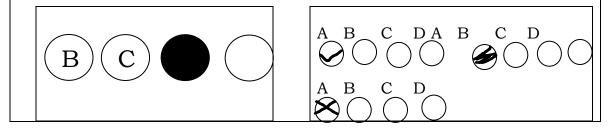
M.Sc. ENTRANCE EXAMINATION

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

nday 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

 Viruses are essentially made up of			
5. Who is the father of Tissue culture?			
a) Bonner b) Haberlandt	c)Laibach d)Gau	utheret	
 6. Cybrids are produced by a) Fusion of two different nuclei from two different sources b) Fusion of two same nuclei from same species c) Nucleus from one species but cytoplasm from both species d) None of the above 7. Which vector is mostly used for transgenic plant production ? 			
a) Plasmid b) cosmid c) Phasmid d) Agrobacterium			
8. Organogenesis is			
a) Formation of callus tissue b) Formation of root and shoot on callus tissue			
c) both (a) and (b) d) genesis of organ			
9. Opposite decussate phyllotaxy is found in			
	c) Hibiscus d) Ne	erium	
10. Flowers are sessile in inflorescence			
a) Corymb b)Raceme	c) Umbel	d) Spike	
11. Unisexual flowers are found in family			
a) Malvaceae b) Solanacea	ae c) Cucurbitaceae	d) None of these	
12. Placentation in Cucurbitaceae is			
a) Parietal b)Axile	c) Basal	d) Marginal	
13. RNA polymerase II is involved in the transcription of			
a) t RNA genes b) r RNA gener	s c) all protein genes	d) sn RNA genes	
14. One gene one enzyme hypothesis was proposed by			
a) Lederberg b) Beadle and Tatur	n c) Garrod	d) Francis crick	

15. When two or more fruits develop from a single flower they are called.....

a) Composite fruits	b) Aggregate fruits	
c) Edible fruits	d) All the above	
16 is defined as maximum displacement of wave from equilibrium, represented by		
crest and troughs of curvature produce	ed.	
a) Amplitude	b) Wave frequency	

a) Amplitudeb) Wave frequencyc) Refractive indexd) Refraction

17. 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

18. In *Cucurbita pepo* fruit shape is controlled by

a) dominant genes b) recessive genes c) duplicate genes d) epistasis

19. 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 20. 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

21. In most simple and primitive type of embryo sac is noticed in Polygonum and developed from chalzal end falls under

) a.

1) D 1

- a) Bisporic eight nucleate b) Monosporic four nucleate
- c) Tetrasporic sixteen nucleate d)Monosporic eight nucleate.
- 22. 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
- 23. Bixin a natural dye is recovered from _____

	a) Flowers	b) Seed	c) Stem	d) Bark	
24. Components which have small value of K have affinity for					
	a) mobile phase	e b) stationary phase	c) no phase	d) solution	
25. Pencillin was first time identified by?					
	a) Florey & Ch	ain b) Alexander Flemings	c) G. Brotzu	d) Selman Wakasman	
26. W	heat originated f	rom	centre.		
	a) Indian	b)Mexico-Guatemala	c) Mediterran	ean d) African	
27. Ai	recanut in botanio	cal term is			
	a) Drupe	b) nut	c) pod	d) berry	
28. Pegion pea scientifically known as <i>Cicer</i>					
	a) <i>vulgaris</i>	b) unguiculata	c) arietinum	d) culanaris	
29		is a national tree of Th	ailand		
a) Butea monosperma		b) Cassia fistulosa			
	c) Saracaindica	a	d) Cassia ren	igera	

-	used to produce	lants c) Haploid plants	d) Triploid plants
31. Dolipore septa is foun	· • •	iants c) napiolu plants	d) Tripiola plants
		c). Basidiomycetes	d) O omvcetes
32. Rust disease is caused	•	s c). Dasidioniyeetes	u). Comyectes
	b).	Puccinia araminis	
	nfestans d).		
33. Which of the followin	•	mernaria soluni	
	• •	c). Ulothrix	d) Oscillatoria
34. Girdle shaped chlorop	•		
			d). Oscillatoria
a). <i>Sargassum</i> 35. <i>Equisetum</i> belongs to		Division.	<i>a)</i> : <i>c c c c c c c c c c</i>
	b) 1		
c) Calamophyta		Filicophyta	
36. Formation of bulbils f			
a).Cycas		Equisetum	
c). Funaria		Psilotum	
37. Archebacteria found in	,		
		hile c). Halophiles	d). None of the above
38. Which of the followin			
	-	c). Rhodophyta	d). Chlorophyta
39. Which tree gives out		· · ·	u). Omorophym
a) Eucalyptus volu			2
	folia	d)Ficus racemosa	
c) <i>Anogeissus latif</i> 40. The most suitable spec	folia		
c) Anogeissus latif	cies for making bio-die		d) Jatropha
c) <i>Anogeissus latif</i> 40. The most suitable spec	cies for making bio-die b) Castor	esel is c) Mustard	
c) Anogeissus latif40. The most suitable spectruma) Pine	cies for making bio-die b) Castor composed of	esel is c) Mustard	
 c) Anogeissus latif 40. The most suitable spectrum a) Pine 41. Bacterial cell wall is of 	cies for making bio-die b) Castor composed of	esel is c) Mustard	
 c) Anogeissus latif 40. The most suitable spectrum a) Pine 41. Bacterial cell wall is an an Cellulose 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido	esel is c) Mustard	
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is of a) Cellulose c) Mannose 42. What is known as spontage 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido	esel is c) Mustard glycan	
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is of a) Cellulose c) Mannose 42. What is known as spontage 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) 1	esel is c) Mustard glycan Foot, seta and capsule	d) Jatropha
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is a a) Cellulose c) Mannose 42. What is known as spo a) Capsule b) I 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) 1	esel is c) Mustard glycan Foot, seta and capsule	d) Jatropha
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 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is a a) Cellulose c) Mannose 42. What is known as spo a) Capsule b) I 43. Which of the following a) Riccia 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i>	esel is c) Mustard glycan Foot, seta and capsule prous? c) <i>Selaginella</i>	d) Jatropha d) only foot
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is a a) Cellulose c) Mannose 42. What is known as spot a) Capsule b) I 43. Which of the following a) Riccia 44. Spore bearing organ orga	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium	esel is c) Mustard glycan Foot, seta and capsule prous? c) <i>Selaginella</i> s	d) Jatropha d) only foot d) <i>Psilotum</i>
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is a a) Cellulose c) Mannose 42. What is known as spo a) Capsule b) I 43. Which of the following a) Riccia 44. Spore bearing organ of a) Sori 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium	esel is c) Mustard glycan Foot, seta and capsule prous? c) <i>Selaginella</i> s c) Cone	d) Jatropha d) only foot d) <i>Psilotum</i>
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is an an Cellulose c) Mannose 42. What is known as sponal Capsule 43. Which of the following an an Ariccia 44. Spore bearing organ of an Sori 45. CoVID-19 is which type 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium pe of Virus? b) DNA	esel is c) Mustard glycan Foot, seta and capsule prous? c) <i>Selaginella</i> s c) Cone	 d) Jatropha d) only foot d) <i>Psilotum</i> d) Strobilus
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is a a) Cellulose c) Mannose 42. What is known as spo a) Capsule b) H 43. Which of the following a) Riccia 44. Spore bearing organ of a) Sori 45. CoVID-19 is which ty a) RNA 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium pe of Virus? b) DNA	esel is c) Mustard glycan Foot, seta and capsule prous? c) <i>Selaginella</i> s c) Cone	 d) Jatropha d) only foot d) <i>Psilotum</i> d) Strobilus
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is an original cellulose c) Mannose 42. What is known as sponal Capsule 43. Which of the following a) Riccia 44. Spore bearing organ original cellulose 45. CoVID-19 is which ty an RNA 46. Shanon index is used to be a spectrum or cellulose 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium pe of Virus? b) DNA to measure b) Richness	esel is c) Mustard glycan Foot, seta and capsule orous? c) <i>Selaginella</i> s c) Cone c) Both RNA & DN c) Both a & b	 d) Jatropha d) only foot d) <i>Psilotum</i> d) Strobilus A d) None of the above d) Interaction
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is an one of the spect of the sector of	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium pe of Virus? b) DNA to measure b) Richness	esel is c) Mustard glycan Foot, seta and capsule orous? c) <i>Selaginella</i> s c) Cone c) Both RNA & DN c) Both a & b	 d) Jatropha d) only foot d) <i>Psilotum</i> d) Strobilus A d) None of the above d) Interaction
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is an one of the second se	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium pe of Virus? b) DNA to measure b) Richness is observed between F b) Ammensalism	esel is c) Mustard glycan Foot, seta and capsule orous? c) <i>Selaginella</i> s c) Cone c) Both RNA & DN c) Both a & b Epiphytes and host plant is c) Commensalism	 d) Jatropha d) only foot d) Psilotum d) Strobilus A d) None of the above d) Interaction is d) parasitism
 c) Anogeissus latif 40. The most suitable spect a) Pine 41. Bacterial cell wall is a a) Cellulose c) Mannose 42. What is known as spo a) Capsule b) I 43. Which of the following a) Riccia 44. Spore bearing organ of a) Sori 45. CoVID-19 is which ty a) RNA 46. Shanon index is used a a) Eveness 47. The interaction which a) Mutualism 	cies for making bio-die b) Castor composed of b) Chitin d) Peptido rophyte in <i>Riccia</i> ? Foot and Capsule c) I g member is heterospo b) <i>Nephrolepis</i> f Psilotum is known as b) Synangium pe of Virus? b) DNA to measure b) Richness is observed between F b) Ammensalism	esel is c) Mustard glycan Foot, seta and capsule orous? c) <i>Selaginella</i> s c) Cone c) Both RNA & DN c) Both a & b Epiphytes and host plant is c) Commensalism	 d) Jatropha d) only foot d) Psilotum d) Strobilus A d) None of the above d) Interaction is d) parasitism

49. Who is father of Indian Taxonomy		
a) N. Wallich b) W. Roxburgh	c) C. Linnaneus	d) M.S Swaminathan
50. Which phase of photosynthesis does not rec		,
a) Photophosphorylation b)	-	
c) Electron transport chain d)		
51. In C4 plants, the cells which do not possess		
	c) palisade	
52 belongs to dicot which has the lat	· 1	/ 1 0/
a) Cocoloba giantifolia b) Magno	•	
c) Tectona grandis d) Pterygo	e .	
53 is an endemic disease		
a) Citrus canker	c) little leaf of brinja	1
b) TMV		
54. The organism <i>Trichoderma</i> is used as		
	c) Growth hormone	
b) Antagonist d)		
55. In absence of specific host, if a pathogen	-	alternative host for its
survival, such pathogen is called as		
a) Facultative parasitec) Pseudo-parasite	d) Nonspecific paras	ite
56. Due to the presence of pathogen, when a c		
Such state is said to be	•	
a) Abnormal b)Symptomatic	c) Asymptomatic	d) Diseased
57. Haploid infect alternative host ba		
a) Urediospore b)Aecidiospore		d) basidiospores
58. The presence of a type of pit is espe		
a) Torus b)Simple pit c)		
59is responsible for preventing the f	olding of the cellulose n	nicrofibrils in plant cell
wall.		
a) Lipids b) Lignin c)	Hemicelluloses	d) protein
60. One of the main component of cell wall is	cellulose ad the molecul	e of cellulose consist of
long chain of residues.		
a) Glucose b)lipids c)	phospholipids d) pol	lysaccharids
61. The protective layer developed during the s	econdary growth of the st	em is called
a) Epidermis b) Periderm	c) Rhizodermis	d) Phellogen
62. The change from meristematic tissue to per	nanent tissue is called	
a) Differentiation. b)	Self-perpetuating	
c) Photosynthesis.	d) Cell division	
63. Phloem that is embedded within the second	ary xylem is called	_ phloem.
a) Internal b) Intraxylary	c) Interxylary	d)Medullary
64. Movement of water and minerals into the va	ascular column of a root is	s controlled by
a) Stomata b) Spongy mesophyll ce		
a) stomata b) spongy mesophyn ee	lls c) Vascular cambiu	m d) Endodermis

65 among the following would be having the lowest intrinsic rate of growth 'r'.			
a) Large trees b) grasses c) bacteria d) unicellular alage			
66. Which biome is characterized by low temperature and low precipitation?			
a) Savannah b) Subtropical desert c) Temperate grassland d) Tundra			
67. The ocean currents move in a clockwise manner in the			
a) Northern Hemisphere b) Southern Hemisphere c) Antarctic ocean d) Equator			
68. Which plant hormone was also initially known as Dormin?			
a) Kinetin b) Dihydrozeatin c) ABA d) Zeatin			
69. Which of the following enzyme is not involved in the C 3 cycle?			
a) RUBISCO b) Aldolase			
c) fructose 1,6, biphosphatase d) Amylase			
70. Plants are multicellular eukaryotes with tissue systems made of various cell types that carry out apacific functions. Plant tissues are mostly composed of cells which are			
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			
71.What kind of bonds are always broken after an introduction of Endonucleases			
a) Covalent bond b) hydrogen bond c) both d) none			
72. An organism which has mechanisms to protect themselves from their own restriction			
enzymes			
a) Plants b) Animals c) viruses d) Bacteria			
73.A sequencing Method which requires DNA synthesis and termination of chain elongation			
a) Chemical b) physical c) enzymatic d) natural			
74. ADNA must be transferred onto a support for further analysis			
a) Nitrocellulose paper b) Nylon paper			
c) Cloth d) plastic paper			
75. Gene of known function and location in a genome is known as			
a) segment b) syndrome c) marker d) stretch			
76. The scoring of bands are open for interpretation and results are not easily			
reproducible between laboratories			
a) AFLP b) RFLP c) SSR d) RAPD			
77. Genetic information is stored in the of nucleotides in DNA.a) orderb) chainc) beadsd) knots			
78. Name with no accompanying description is called as			
a) Tutonym c) <i>Nomen nudum</i>			
b) Homonym d) Later homonym			
79. Tri-seriate perianth and multi-pistilate, apocarpus gynoecium is character of			
a) Rutaceae c) Sterculiaceae			
a) Rutaceaeb) Myrtaceaec) Sterculiaceaed) Anonaceae			
b) Myrtaceae d) Anonaceae			
b) Myrtaceae d) Anonaceae 80. Family is characterized by leaf opposed inflorescence and terminal bud			

81. Presence of gynophoric flower with 6 to many stamens is a character of a) Sterculiaceae c) Capparidaceae b) Mimosaceae d) Tiliaceae 82. Meliaceae is distinguished from related taxa by a) Stamina tube c) discoid stigma b) Lack of resin producing ducts d) All the above 83. 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 84. 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 the 'plant of immortality' by the ancient Egyptians, was used for its 85. 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 c) *Aloe barbadensis* d) Artemisia scoparia 86. Early Life on the mother earth is always considered to be b) Physical a) Chemical c) Physiological d) Social 87. Sydney fox has described the evolution of membrane with the help of a) Chemicals b) physical c) coacervates d) protenoids 88. 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 89. With the help of the immunoassay studies we are able to gather information for a) Evolution b) Systematics c) Species d) Life 90. 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 91. 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 92. 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

93. One of the strands of double-stranded, 10kbp DNA duplex has the following numbers of				
base residues: Adenine (A	A) -3800, Thymi	ine (T) -2600. Th	ne base comp	osition of the whole
double stranded molecule	will be			
a) A-5200, T-520	0, G-4800, C-480	b) A-7600,	T-7600, G-240	00, C-2400
c) A-6400, T-3600	, G-6400, C-3600	d) A-6400,	T-6400, G-36	500, C-3600
94. The structure of alfa-he	elix and beta-shee	et were first elucid	ated by	
a) Linus Pauling b) G. N. Ramachandran				
b) C. V. Venktraman d) Francis Crick				
95. Relationship between	organisms of dif	ferent species in v	which one org	anism is inhibited or
destroyed while the other of	organism remains	unaffected is know	wn as	
a) Amensalism		b)Parasiti	sm	
c) Commensalism	c) Commensalism d) Mutualism			
96. Common target for ant	ibiotics in bacteri	ia is?		
a) Microsome b)M	esosome	c) Ribosomes	d) Plasm	nid
97. Protein synthesis is carried out by				
a) Golgi body	b) Smooth E l	R c) Rough	ER d	l)Chloroplast
98. 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 membr	cane c)	cell wall	d) nucleus
99. Among the following the most variable stage of cell cycle is				
a). G1	b). S	c). G2	d	l). M
100. Which of these is a storage polysaccharides of animals?				
a). Starch	b). Glycogen	c). Hepar	in d). Hemi	icellulose

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