

This booklet consists of **100** questions and **12** printed pages.

RGUCET/____/____

Series

NIL

RGUCET 2023
Masters in BOTANY

Full Marks: 100

Time: 2 Hours

Roll No.

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Day and Date of Examination :

Signature of Invigilator(s) :

Signature of Candidate :

General Instructions:

PLEASE READ ALL THE INSTRUCTIONS CAREFULLY BEFORE MAKING ANY ENTRY.

1. DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. Candidate must write his/her Roll Number on the space provided.
3. This Test Booklet contains 100 Multiple Choice Questions (MCQs). Each question carries 1 mark. There shall be negative marking of 0.25 against each wrong attempt.
4. Please check the Test Booklet to verify that the total pages and total number of questions contained in the test booklet are the same as those printed on the top of the first page. Also check whether the questions are in sequential order or not.
5. Candidates are not permitted to enter into the examination hall 15 minutes after the commencement of the entrance test or leave the examination hall before 30 minutes of end of examination.
6. Making any identification mark in the OMR Answer Sheet or writing Roll Number anywhere other than the specified places will lead to disqualification of the candidate.
7. Candidates shall maintain silence inside and outside the examination hall. If candidate(s) is/are found violating the instructions mentioned herein or announced in the examination hall, they will be summarily disqualified from the entrance test.
8. In case of any dispute, the decision of the Entrance Test Committee, RGU shall be final and binding.
9. The OMR Answer Sheet consists of two copies, the Original copy and the Student's copy.

1	If mango is a drupe, what are tomatoes?				d	berries
	a) achene	b) caryopsis	c) mericarp	d) berries		
2	If foal is to horse, what is a joey to?				a	Kangaroo
	a) Kangaroo	b) tiger	c) Monkey	d) Cheetah		
3	If a group of trees is called “a clump of trees”, what is a group of actors called?				b	A company of actors
	a) a battalion of actors	b) a company of actors	c) a choir of actors	d) a colony of actors		
4	Fill in the blank with the correct feminine noun. The Earl and thewere invited to the palace by the King and the				a	Countess, Queen
	a) Countess, Queen	b) Lady, Queen	c) Earless, Queen	d) Madam, Queen		
5	If the plural form of mango is mangoes, what is the plural form of dynamo?				a	Dynamos
	a) Dynamos	b) Dynamoes	c) Dynamose	d) Dynamites		
6	What does the italicised idiom in the sentence mean? He is given to tall talks, so take his statements <i>with a grain of salt</i> .				a	With reservations
	a) with reservations	b) do not believe	c) he does not speak truth	d) he speaks frankly		
7	The phrase “a wet blanket” means				a	Kill joy
	a) kill joy	b) covered with debt	c) deal at length	d) sudden calamity		
8	“A storm in a tea cup” means				a	excitement over a trivial matter
	a) excitement over a trivial matter	b) a simple work	c) to share fortune of	d) just imaginary		

9	The closest planetary neighbour of the earth in the solar system is ____				a)	Venus
	a) Venus	b) Mars	c) Jupiter	d) Mercury		

10	The genome of Corona virus is _____				b)	ss RNA
	a) dsRNA	b) ssRNA	c) dsDNA	d) ssDNA		
11	Humidity is the amount of _____ in the air.				c)	Water vapour
	a) Moisture	b) Heat	c) Water vapour	d) Fog		
12	Which one of the following is the most abundant primary green house gas?				d)	Carbon dioxide
	a) Fluorinated gas	b) Nitrous oxide	c) Methane	d) Carbon dioxide		
13	The most abundant element in the Universe is _____.				b)	Hydrogen
	a) Helium	b) Hydrogen	c) Oxygen	d) Nitrogen		
14	The Nobel Prize winner in the field of Physiology or Medicine for the year 2022 is _____.				a)	Svante Paabo
	a) Svante Paabo	b) Michael Houghton	c) David Julius	d) William G. Kaelin Jr.		
15	The world's biggest oxygen producer is _____.				d)	The Marine Ecosystem
	a) The Tropical Ecosystem	b) The Amazon Rain Forest	c) The Bhutan Carbon Sink	d) The Marine Ecosystem		
16	In aqueous solution, pH is the measure of _____.				d)	Hydrogen ion concentration
	a) Acidity	b) Alkalinity	c) Hydrogen peroxides	d) Hydrogen ion concentration		

17	What is the probability of getting a sum of at least 9 from two throws of a dice?				D	5/18
	a) 1/8	b) 1/9	c) 1/12	d) 5/18		
18	From a point X on a level ground, the angle of elevation of the top of a Temple is 30°. If the distance from the foot of the temple to the point X is 346 m,					

	then the height of the temple is: (given $\sqrt{3} = 1.73$)					
	a) 100 m	b) 200 m	c) 300 m	d) 346 m	B	200 m
19	The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 8m away from the wall. The length of the ladder is:					
	a) 16 m	b) 4 m	c) 12m	d) None of the above	A	16 m
20	Which of the following should be added to make $x^{16} + 81$ a perfect square?					
	a) $14x^8$	b) $16x^8$	c) $18x^8$	d) $20x^8$	C	$18x^8$
21	The total surface area of a cylinder whose radius is $1/2$ of its height is					
	a) $\pi h^2/2$	b) $2\pi h^2/2$	c) $3\pi h^2/2$	d) $4\pi h^2/2$	C	$3\pi h^2/2$
22	On selling 15 balls at Rs. 500, there is a loss equal to the cost price of 10 balls. The cost price of a ball is:					
	a) Rs. 50	b) Rs. 100	c) Rs. 150	d) Rs. 5000	B	Rs. 100
23	A river 4 km wide is flowing at the rate of 10km/hr. A boatman, can row the boat at a speed of 20 km/hr in still water, goes a distance of 5 km upstream and then comes back. The time taken by him to complete his journey is					
	a) 10 mins	b) 20 mins	c) 40 mins	d) 80 mins	C	40 mins
24	In the given number series 3, 7, 13, 27, 53, (.....), choose the correct missing number that will continue the same pattern					
	A. 95	B. 97	C. 105	D. 107	D	107
25	If x, y are two positive real number and $x^{1/3} = y^{1/5}$, then which of the following					

	relations is true?					
	a) $x^3 = y$	b) $y^3 = x$	c) $x^{20} = y^{15}$	d) $x^{25} = y^{15}$	D	$x^{25} = y^{15}$

26	Which of the following is the correct suffix for order?				b	-ales
	a) -eodea	b) -ales	c) ceae	d) -enea		
27	Which of the following is the correct way to write author citation?				b	<i>Musa x paradisiaca</i> L.
	a) <i>Musa x paradisiaca</i> , L.,	b) <i>Musa x paradisiaca</i> L.	c) <i>Musa x paradisiaca</i> , L:	d) <i>Musa x paradisiaca</i> , L.,		
28	Which of the following horticultural crop is traditionally used in rituals by the tribal communities of Northeast India?				a	<i>Zingiber officinale</i>
	a) <i>Zingiber officinale</i>	b) <i>Zingiber montanum</i>	c) <i>Dioscorea alata</i>	d) <i>Citrus</i>		
29	What of the following is a periodical taxonomic literature?				a	Journal
	a) Journal	b) Flora	c) Monographs	d) Conspectus		
30	Which of the following plant family is considered primitive in APG-IV classification system?				d	Magnoliaceae
	a) Malvaceae	b) Lamiaceae	c) Rubiaceae	d) Magnoliaceae		
31	What is the botanical name for the Ladies Finger?				b	<i>Abelmoschus esculentus</i>
	a) <i>Vigna radiata</i>	b) <i>Abelmoschus esculentus</i>	c) <i>Abelmoschus moschatus</i>	d) <i>Solanum americanum</i>		

32	Guard cells differ from epidermal cells in having:				b	Chloroplast
	a) Mitochondria	b) Chloroplast	c) Nucleus	d) Golgi body		
33	The photosynthetic and mitochondrial transports are affected by which of the following three elements?				d	Cu, Mn, and Fe
	a) Zn, Cu, and Fe	b) Cu, Mg, and Cl	c) Co, Mn, and Fe	d) Cu, Mn, and Fe		
34	Photochemical reaction requires:					

	a) 10^{-2} seconds	b) 10^{-3} seconds	c) 10^{-9} seconds	d) 10^{-12} seconds	c	10^{-9} seconds
35	Primary electron acceptor from excited P680 in PSII is:				c	c) Pheophytin
	a) QA	b) Phylloquinone	c) Pheophytin	d) Tyr _z		
36	Proton motive force across the membrane is created due to				c	Both of them
	a) pH gradient	b) Membrane potential	c) Both of them	d) None of them		
37	Chemiosmotic hypothesis for ATP synthesis was proposed by				d	Peter Mitchell
	a) Paul Boyer	b) John Walker	c) Charles Darwin	d) Peter Mitchell		

38	Biologically, a pathogen that causes diseases on specific target hosts are called				a)	Obligate Parasites
	a) Obligate Parasites	b) Pathogen	c) Both parasite and pathogen	d) Sometimes parasite and sometimes pathogen		
39	Obligate intracellular parasites are the characteristic features of				b)	All viruses
	a) Some plant viruses	b) All viruses	c) Some plant Mosaic viruses	d) Some plant Leaf Roll viruses		
40	The Disease symptoms are visible on an infected host plant on its				d)	Both shoot and root parts
	a) Shoot parts	b) Root parts	c) Leaves	d) Both shoot and root parts		
41	When a vulnerable host plant is infected by a pathogen after a period of dormancy, it is technically called a				a)	Primary infection
	a) Primary infection	b) Secondary infection	c) Tertiary infection	d) Systemic infection		
42	The rate of Transpiration in an infected and a diseased host plant always				a)	Increases
	a) Increases	b) Decreases	c) Sometimes	d) Sometimes		

			increases	decreases		
43	HV-Toxins are secondary compounds which are				b)	Host specific
	a) Non-Host specific in nature	b) Host specific in nature	c) Secreted by Pyricularia	d) Secreted by Alternaria		

44	Which of the following correct definition for Lac Operon gene?				b	Lactose Operon
	a) Lactic acid Operon	b) Lactose Operon	c) Location Operon	d) Local Operon		
45	Which of the following is known as physical mutagens of DNA?				a	UV-B radiation
	a) UV-B radiation	b) Acid	c) Alkaline	d) Water		
46	Which of the following option is correct definition of Totipotency?				b	Ability of the single cell to multiply into many
	a) Ability of more than one cell to multiply to many	b) Ability of the single cell to multiply into many	c) Cell cycle arrest	d) Cell division stop		
47	Which of the following organism is used for gene transfer?				b	<i>Agrobacterium tumefaciens</i>
	a) <i>Penicillium notatum</i>	b) <i>Agrobacterium tumefaciens</i>	c) <i>Rhizopus stolonifer</i>	d) <i>Saccharomyces cerevisiae</i>		
48	Which of the following is not a physical mutagen?				d	Hydrochloric acid
	a) UV-B radiation	b) Electromagnetic radiation	c) Microwaves	d) Hydrochloric acid		

49	White Rust of Crucifers is caused by				b)	Albugo
	a) Synchronium	b) Albugo	c) Peronospora	d) Pythium		
50	Water molds are group of fungal organism called				c)	Oomycetes
	a) Phycometes	b) Myxomycetes	c) Oomycetes	d) Zygomycetes		

51	Downy mildew of cucurbits is caused by				c)	Peronospora
	a)Synchytrium	b)Saprolegnia	c) Peronospora	d) Albugo		
52	During transformation, the genetic material transferred is a				a)	Segment of DNA
	a) Segment of DNA	b) Plasmid	c) Molecule of DNA	d) Chromosome		
53	In flagellated bacterial cells, the motility is generated by its				c)	Basal body
	a)Axial Filament	b)Hook	c)Basal body	d) L ring		
54	Archaeobacteria that can thrive in extreme salty habitats are called				d)	Halophiles
	a) Thermophiles	b) Cryophilic	c)Methanogens	d) Halophiles		
55	Streptomyces are genus of microbe belonging to				c)	Actinomycetes
	a) Archaeobacteria	b)Eubacteria	c)Actinomycetes	d) Mollicutes		

56	Which algal division has only chlorophyll- a as their photosynthetic pigments?				b	Cyanophyta
	a) Chlorophyta	b) Cyanophyta	c) Charophyta	d) Cryptophyta		
57	The members of which division of algae has the coenocytic thallus construction:				b	<i>Vaucheria</i>
	a) <i>Chara</i>	b) <i>Vaucheria</i>	c) <i>Polysiphonia</i>	d) <i>Chaetophora</i>		
58	The members of the Charophyta has the cell wall composed of-				b	Cellulosic & calcified in some spp.
	a) Cellulosic and peptic materials	b) Cellulosic & calcified in some spp.	c) Outer layer pectin and inner layer cellulose	d) Cell wall absent		
59	The diatom cell consists of two overlapping halves nicely fitted one upon the other like an old soap cage is called-				b	Frustules
	a) Raphe	b) Frustules	c) Hypotheca	d) Epitheca		
60	Nannandrous sexual reproduction type is found in the genus of green algae-				a	<i>Oedogonium</i>

	a) <i>Oedogonium</i>	b) <i>Zygnema</i>	c) <i>Nitella</i>	d) <i>Ulva</i>		
61	Which group of algae the asexual reproduction is commonly known as “shrinking division”?				c	Bacillariophyta
	a) Phaeophyta	b) Rhodophyta	c) Bacillariophyta	d) Chlorophyta		
62	The most primitive thallus organisation in Phaeophyta usually heterotrichous consisting of a holdfast, true branching with a uniseriate filament is found in-				a	<i>Ectocarpus</i>
	a) <i>Ectocarpus</i>	b) <i>Desmarestia</i>	c) <i>Fucus</i>	d) <i>Laminaria</i>		
63	Diplohaplontic life cycle is represented by which genus of the given algae?				a	<i>Fucus</i>
	a) <i>Fucus</i>	b) <i>Laminaria</i>	c) <i>Spirogyra</i>	d) <i>Polysiphonia</i>		
64	Floridiophycideae exhibit triphasic life cycle except biphasic life cycle in the				d	Nemalionales
	a) Cryptonemiales	b) Gelidiales	c) Gigartinales	d) Nemalionales		

65	The thallus of Contains a single chloroplast in each cell				b	<i>Anthoceros</i>
	a) <i>Marchantia</i>	b) <i>Anthoceros</i>	c) <i>Polytrichum</i>	d) <i>Pogonatum</i>		
66	The sporophyte in does not have foot and seta				c	<i>Riccia</i>
	a) <i>Marchantia</i>	b) <i>Anthoceros</i>	c) <i>Riccia</i>	d) <i>Porella</i>		
67	Peristome teeth is a feature of the sporophytes of which of the following?				c	<i>Polytrichum</i>
	a) <i>Marchantia</i>	b) <i>Anthoceros</i>	c) <i>Polytrichum</i>	d) <i>Riccia</i>		

68	In bacteria, Mesosomes are formed from				b)	Cell membrane
	a) Cell wall	b) Cell membrane	c) Flagella	d) Vacuoles		
69	Archaeobacteria that can thrive in marshes, bogs and deep ocean					

	floors are characteristically				d)	Anaerobic Methanogens
	a) Aerobic Halophiles	b) Anaerobic Halophiles	c) Aerobic Methanogens	d) Anaerobic Methanogens		
70	Among microorganisms, the Bacteria like group of organisms that lacks a cell wall is				a)	Mycoplasma
	a) Mycoplasma	b) Archaeobacteria	c) Actinomycetes	d) Prions		
71	The fundamental feature of Viroids lies in their possession of				b)	A naked RNA
	a) A naked DNA	b) A naked RNA	c) A protein coated DNA	d) A protein coated RNA		
72	Bacterial endospores are highly resistant resting or dormant spores due to its				b)	Cortex
	a) Spore coat	b) Cortex	c) Core wall	d) Outer membrane		

73	The branch of ecology which deals with the ecology of population is called					
	a) habitat ecology	b) ecosystem ecology	c) Demecology	d) Taxonomic ecology	c	Demecology
74	The product of total barometric pressure times the concentration of dry weight is called				a	
	a) Partial pressure	b) atmospheric pressure	c) vapour pressure	d) room pressure		Partial pressure
75	Water has the greatest of all liquid except mercury					Surface tension
	a) viscosity	b) surface tension	c) buoyancy	d) none of the above	b	
76	Soil permeability is directly dependent on				b	Pore size

	a)Gravitational water	b) Pore size	c)Soil water	d)Soil density		
77	The density per unit total space is called				a	Crude density
	a)Crude density	b) Ecological density	c) Biomass density	d) Specific density		
78	For a population the surviving individuals are more significant for a population than a dead ones, the death rate can be represented by				b	Life table
	a) Minimum mortality	b) life tables	c) Vital index	d) Line curve		

79	The corollary to energy subsidy is the concept in which excess organic production by one ecosystem is exported to another less productive ecosystem is called				b	Source-sink energetics
	a) Ecological genetics	b) Source-sink energetics	c) Subsidy-stress gradient	d) Primary productivity		
80	Net primary productivity is represented by				a	NPP=GPP-R
	a) $NPP=GPP-R$	b) $NPP=GPP+R$	c) $NPP=GPP/R$	d) $NPP=GPP-1$		
81	Y-Shaped energy flow model is also referred as				b	Two channel energy flow model
	a) One channel energy flow model	b) Two channel energy flow model	c) One way energy flow model	d) Two way energy flow model		
82	The fraction of total amount of a substance in a component which is released in a given length of time is called				b	

	a) Turnover time	b) Turnover rate	c) Released rate	d) accumulation time		Turnover rate
83	The prediction of the future state of ecosystems and the fluxes of carbon dioxide between atmosphere and the land biosphere is represented by				d	Terrestrial ecosystem models
	a) Atmospheric model	b) Influx model	c) Ecosystem models	d) Terrestrial ecosystem models		
84	According to logistic equation of population growth the intrinsic rate of natural increase (r) is progressively reduced as population size				b	Increases towards K
	a) decreases towards K	b) Increases towards K	c) Remains constant at K	d) None of the above		

85	Which of the following organism is found as symbiotic association in the root of <i>Cycas</i> ?				c	Anabaena
	a) <i>Volvox</i>	b) <i>Rhizobium</i>	c) <i>Anabaena</i>	d) <i>Chlorella</i>		
86	What is the name for female reproductive part in <i>Cycas</i> cone?				b	<i>Megasporophylls</i>
	a) <i>Microsporophylls</i>	b) <i>Megasporophylls</i>	c) <i>Strobilus</i>	d) <i>Seeds</i>		
87	The native range of <i>Gingko biloba</i> is				c	China
	a) Africa	b) Latin America	c) China	d) Japan		
88	Which of the following statement is correct about reproductive parts of <i>Pinus</i> ?				d	Female cone is bigger than the male cone
	a) Male cone is bigger than female cone	b) Male cone is equal the size of female cone	c) Female cone bears pollen grains	d) Female cone is bigger than the male cone		

89	The reactivity of group II elements with water				b	Increases down the group
	a) Decreases down the group	b) Increases down the group	c) Does not follow any particular trend	d) No reaction		
90	Which of the following is obtained from palm tree?				c	Palmitic acid
	a) Arachidonic acid	b) Oleic acid	c) Palmitic acid	d) Linoleic acid		
91	Which of the following amino acids contain aliphatic hydroxyl group				a	Serine
	a) Serine	b) Alanine	c) Valine	d) Proline		
92	Which is the invert sugar?				b	Sucrose
	a) Maltose	b) Sucrose	c) lactose	d) Hallobiose		
93	In nucleic acids, the phosphodiester linkage between adjacent nucleotides are between				a	5'-phosphate of one nucleotide joins the 3'-hydroxyl of the next nucleotide
	a) 5'-phosphate of one nucleotide joins the 3'-hydroxyl of the next nucleotide	b) 3'-phosphate of one nucleotide joins the 3'-hydroxyl of the next nucleotide	c) 3'-phosphate of one nucleotide joins the 5'-hydroxyl of the next nucleotide	d) 5'-phosphate of one nucleotide joins the 5'-hydroxyl of the next nucleotide		
94	The mechanism of enzyme action takes place by				a	Reducing the activation energy
	a) Reducing the activation energy	b) Increasing activation energy	c) Increasing the pH value	d) Decreasing pH value		
95	Which is the aromatic amino acid				c	Tryptophane
	a) Serine	b) Cysteine	c) Tryptophane	d) Glutamine		
96	Which is the simplest amino acid				a	Glycine
	a) Glycine	b) Serine	c) Tyrosine	d) Valine		
97	Which one of the following is not a Nitrogen fixing organism				c	Pseudomonas

	a) Spirulina	b) Azolla	c) Pseudomonas	d) Oscillatoria		
98	Which one of the following is the saturated fatty acid?				a	Stearic acid
	a) Stearic acid	b) Linolenic acid	c) Linoleic acid	d) palmitoleic acid		
99	The rise per residue of the alpha helix protein is				c	1.5 Å
	a) 3.6 Å	b) 20 Å	c) 1.5 Å	d) 5.4 Å		
100	How many nucleotide residues are per pitch of a DNA				c	10.5
	a) 15	b) 17	c) 10.5	d) 12		

SPACE FOR ROUGH WORK