

This booklet consists of 100 questions and 12 printed pages.

RGUCET/2023/PGD/01

Series

NIL
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**RGUCET 2023**  
**ADVANCED POST GRADUATE DIPLOMA IN BIODIVERSITY**  
**(APGDB)**

**Full Marks: 100**

**Time: 2 Hours**

Roll No.

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Day and Date of Examination :

Signature of Invigilator(s) :

Signature of Candidate :

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*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	Peacock: India:: Bear : ?				b	Russia
	a) Netherland	b) Russia	c) Germany	d)England		

2	FAG, GAH, HAI, IAJ..... Find out the next series from the following options				A	JAK
	a) JAK	b) HAL	c) HAK	d) JAI		
3	If A is the brother of B; B is the sister of C; and C is the father of D, how A is related to D?				D	Uncle
	a) Brother	b) Sister	c) Nephew	d) Uncle		

4	ELFA GLHA ILJA _____ MLNA				B	KLLA
	a)LLMA	b) KLLA	c) OLPA	d) KLMA		

5	Which institution launched the ‘Good for You, Good for the Planet’ campaign?				b	WWF
	a) UNEP	b) WWF	c) IMF	d) IEA		
6	Which tribe is playing a major role in ‘Protect Hornbills Project’?				a	Nyishi Tribe
	a)Nyishi Tribe	b)Baiga Tribe	c) Bodo Tribe	d) Naga Tribe		
7	Sea butterflies belong to a sub order of which species?				b	Snail
	a) Butterfly	b) Snail	c) Fish	d) Turtle		

8	In which country the G-20 Summit will be held in 2023?				D	India
	a) Brazil	b) South	c) Indonesia	d) India		

		Africa				
9	Which country will become the world's first country to allow legalized production, sale and consumption of marijuana?					
	a) Portugal	b)Uruguay	c) USA	d) Norway	B	Uruguay

10	India signed a MoU on International Solar Alliance (ISA) with which country?					
	a)Chile	b) Brazil	c)Argentina	d)Hungary	D	Hungary

11	The children ___ playing in the garden. (use suitable verb)				a	were
	a) were	b) was	c) will	d) is		
12	The cat is lying _____ the bed ( Use suitable preposition)				b	
	a) into	b) under	c) in	d) above		under
13	That which cannot be corrected					
	a) Unintelligible	b) Illegible	c) Indelible	d) Incorrigible	d	Incorrigible
14	Present opposing arguments or evidence				c	
	a) Criticise	b) Reprimand	c) Rebut	d) Rebuff		Rebut

15	Spot the correct spelling					
	a)Committee	b) Commitee	c) Comittee	d) Commite	A	Committee
16	A speech delivered without any prior preparation					

a) Narration	b) Dialogue	c) Argument	d) Extempore	D	Extempore
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17	<b>Passive Voice: The car was fixed by the mechanic</b>				D	The mechanic fixed the car.
	a) The mechanic will fix the car.	b) The mechanic had fixed the car.	c) The mechanic is fixing the car.	d) The mechanic fixed the car.		
18	Which of the following is not a statement				C	Where are you going ?
	a) Every set is a finite set.	b) 8 is less than 6.	c) Where are you going?	d) The sum of interior angles of a triangle is 180 degrees.		
19	<b>Fill in the blank , ELFA GLHA ILJA _____ MLNA</b>				D	KLLA
	a) OLPA	b) KLMA	c) LLMA	d) KLLA		
20	<b>Smith said, "Lilly is wife of the grandson of my sister's mother." How is Smith related to Lilly?</b>				B	Father-in-law
	a) Father	b) Father-in-law	c) Brother-in-law	d) Grand Father		

21	What is the number of chromosomes found in human somatic cell?				c	46
	a) 48	b) 56	c) 46	d) 42		
22	Which one of the following animals lay eggs to reproduce?				a	Platypus
	a) Platypus	b) Seal	c) Dolphin	d) Whale		

23	Which of the following is not a Ramsar Wetland Site in Northeast India				C	Ganga Lake (Arunachal Pradesh)
	a) DeeporBeel (Assam)	b) Loktak Lake (Manipur)	c) Ganga Lake (Arunachal Pradesh)	d) Palak Lake (Mizoram)		
24	The Northeast gets most of its rainfall from				A	Bay of Bengal branch of southwest monsoon
	a) Bay of Bengal branch of southwest monsoon	b) Arabian branch of southwest monsoon	c) Western cyclonic disturbance	d) Retreating monsoon		

25.	Namdapha National Park is located in the .....district of Arunachal Pradesh					
	a)Changlang	b) East Kameng	c) Lower Siang	d) Upper Subansiri	a	Changlang

26	The sporophyte of bryophytes usually consists of foot, seta and capsule, although some species show exceptions. Which of the following species lacks seta?				a	<i>Anthoceros</i> spp.
	a) <i>Anthoceros</i> spp.	b) <i>Marchanti</i> a spp.	c) <i>Polytrichu</i> m spp.	d) All of them have seta		
27	The thallus cells of .....contain a single, large chloroplast in their cytoplasm				b	<i>Anthoceros</i> spp.
	a) <i>Polytrichum</i> spp.	b) <i>Anthoceros</i> spp.	c) <i>Marchantia</i> spp.	d) <i>Riccia</i> spp.		
28	Operculum and peristome teeth are features of the sporophytes of				c	<i>Polytrichu</i> m spp.
	a) <i>Anthoceros</i> spp.	b) <i>Marchantia</i>	c) <i>Polytrichum</i>	d) All of them have operculum and		

		spp.	spp.	peristome teeth		
29	Which of the following statement is CORRECT				A	Polytene chromosomes are specific type of interphase chromosomes consisting of thousands of DNA strands
	a) Polytene chromosomes are specific type of interphase chromosomes consisting of thousands of DNA strands	b) Polytene chromosomes are specific type of chromosomes consisting of giant DNA strands	c) Absent of bands and interbands	d) Polytene chromosomes are absent in plants		
30	Which of the following represent phylogenetic tree:				C	Cladogram
	a) Idiogram	b) Phenogram	c) Cladogram	d) Karyogram		
31	Inside the nucleus, DNA is combined with proteins to form a fibrous complex called				B	Chromatin
	a) Chromatid	b) Chromatin	c) Chromosome	d) Chromosomes		
32	'Balbiani rings are associated with :				C	Polytene chromosomes
	a) B-DNA	b) Lampbrush chromosomes	c) Polytene chromosomes	d) Barr bodies		
33	Populations of the fruit fly <i>Drosophila subobscura</i> in North and South America contain less genetic variation than the European populations from which they came, as measured by the number of chromosome inversions in each population. Within two decades of arriving in the Americas, <i>D. subobscura</i> populations had increased dramatically and spread widely in spite of their reduced genetic variation. This is an example of?				C	Founder effect
	a) Genetic drift	b) Artificial selection	c) Founder effect	d) Convergent evolution		
34	The _____ represent the second level of chromosomal DNA packing				C	Solenoid
	a) Chromatid	b) Beads on string	c) Solenoid	d) 300nm fibre		
35	Which technique is used to separate separates cell components by				C	Differential

	centrifuging an extract at different speeds					centrifugation
	a) Zonal centrifugation	b) Moving zone centrifugation	c) Differential centrifugation	d) Isopycnic centrifugation		
36	In Polymerase chain reaction, the T <sub>m</sub> is				A	temperature when half the molecules are double-stranded and half are single-stranded
	a) temperature when half the molecules are double-stranded and half are single-stranded	b) cooling temperature which must be adjusted up or down if necessary	c) heating temperature which must be adjusted up or down if necessary	d) temperature when all the DNA are single-stranded		
37	The agarose gel is				A	a polysaccharide obtained from seaweed
	a) polysaccharide obtained from seaweed	b) monosaccharide obtained from seaweed	c) a polysaccharide obtained from Bluegreen algae	d) made up of acrylamide		
38	A dideoxynucleotide used in DNA sequencing is				C	human-made molecule that lacks a hydroxyl group at both the 2' and 3' carbons of the sugar moiety
	a) human-made molecule that lacks a ether group at both the 2' and 3' carbons of the sugar moiety	b) a natural molecule that lacks a hydroxyl group at both the 2' and 3' carbons of the sugar moiety	c) human-made molecule that lacks a hydroxyl group at both the 2' and 3' carbons of the sugar moiety	d) Both a and b		
39	Which of the following statement is NOT CORRECT for Gas chromatography				C	The sample for Gas Chromatography is dissolved in a suitable solvent such
	a) It is necessary for the rapid and complete volatilization of	b) Columns used are made up of glass or steel	c) The sample for Gas Chromatography is	d) Majority of non-polar		

	the sample		dissolved in a suitable solvent such H <sub>2</sub> O	and polar compounds can be analysed		H <sub>2</sub> O
40	Which of the following DNA fingerprinting technique uses random oligo-primers?				A	RAPD
	a) RAPD	b) AFLP	c) SSR	d) ISSR		
41	The production of SEM images utilize the				C	secondary and back scattered electrons
	a) backscattered and elastically scattered electrons	b) backscattered and inelastically scattered electrons	c) secondary and back scattered electrons	d) Bremsstrahlung X-ray		
42	For a light microscope, the limit of resolution is				D	slightly less than 200 nm
	a) slightly more than 200 nm	b) slightly less than 100 nm	c) slightly more than 100 nm	d) slightly less than 200 nm		
43	Cosmids combine the properties of				B	plasmids and Bacteriophage Lamda vectors
	a) plasmids and M13 vectors	b) plasmids and Bacteriophage Lamda vectors	c) two different plasmids	d) plasmids and Bacterial Artificial Chromosome		
44	Ti-plasmid of Agrobacteria does not have				C	Ori region
	a) RB and LB	b) T-DNA	c) Ori region	d) Oncogenic gene		
45	The HGP (Human Genome Project)				A	began in 1990 and was completed in 2003
	a) began in 1990 and was completed in 2003	b) began in 1990 and was	c) began in 1991 and was	d) began in 1990		



		completed in 2002	completed in 2003	and was completed in 2004		
46	A software program available on the NCBI website, called BLAST				B	allows the user to compare a DNA sequence with every sequence in GenBank
	a) allows the user to construct a phylogenetic tree	b) allows the user to compare a DNA sequence with every sequence in GenBank	c) allows the user to detect the mutation in a gene under study	d) allows the user to do the gene mapping, followed by submission of gene in the data base		

47	White rust disease of crucifers are caused by					
	a) Synchronitrium	b) Saprolegnia	c) Albugo	d) Alternaria	b)	Albugo
48	Peziza is a fungi belonging to the group					
	a) Ascomycetes	b) Hyphomycetes	c) Basidiomycetes	d) Holobasidiomycetes	a)	Ascomycetes
49	The asexual reproductive structure of Alternaria is a				b)	Conidium
	a) Spore	b) Conidium	c) Hypha	d) Mycelium		

50	Stellate shaped chloroplast are commonly found in which member of green algae-				d	<i>Zygnema</i>
	a) <i>Chara</i>	b) <i>Chlamydomonas</i>	c) <i>Volvox</i>	d) <i>Zygnema</i>		

51	The type of life cycle main plant body is represented by gametophyte and sporophyte stage is represented by zygote only are exhibited by-				c	<i>Volvox</i>
	a) <i>Cladophora</i>	b) <i>Fucus</i>	c) <i>Volvox</i>	d) <i>Laminaria</i>		
52	The Rhodophyta members has the cell wall composed of-				d	Outer layer pectin and inner layer cellulose
	a) Cell wall absent	b) Cellulosic & calcified	c) Cellulosic and peptic materials	d) Outer layer pectin and inner layer cellulose		
53	Triphasic life cycle in <i>Polysiphonia</i> consists of three kinds of plants. Tick the odd one from the following-performed -				d	Carposporophyte (n)
	a) Tetrasporophyte (2n)	b) Carposporophyte (2n)	c) Gametophyte (n)	d) Carposporophyte (n)		
54	A crude, a refined or edible protein extracted from pure microbial cultures, dead, or dried cell biomass. That can be used as a protein supplement for either humans or animals is called-				a	Single Cell Protein
	a) Single Cell Protein	b) Stress Cultivated Plant	c) Somatic Cultivated Plantlet	d) Soma Clonal Plants		
55	The best example of algal biofertiliser are-				d	<i>Nostoc</i> and <i>Anabaena</i>
	a) <i>Rhizobium</i> and <i>Azospirillum</i>	b) Ectomycorrhizae and Endomycorrhizae	c) <i>Actinomyces meyeri</i> and <i>Nocardia brasiliensis</i> .	d) <i>Nostoc</i> and <i>Anabaena</i> .		
56	Choose the right answer from the following antibiotics function as Protein Synthesis Inhibitors?				c	Tetracycline
	a) Penicillin	b) Cefotaxime	c) Tetracycline	d) Sporeine		
57	The food reserve in Rhodophyceae member is-				d	Floridean starch
	a) Cyanophycan granules	b) Starch and fats	c) Paramylon	d) Floridean starch		

	and starch					
58	Heterocysts are specialized nitrogen fixing cells formed during nitrogen starvation by some filamentous blue green algae and only -				a	Photosystem-I is present
	a) Photosystem-I is present	b) Photosystem-I is absent	c) Both Photosystem -I & II is present	d) Both Photosystem-I & II is absent		
59	Which of the algae shows a thallus organization in which large number of nuclei are present without any wall- septation -				a	<i>Vaucheria</i>
	a) <i>Vaucheria</i>	b) <i>Spirogyra</i>	c) <i>Ulothrix</i>	d) <i>Polysiphonia</i>		

60	Which chlolorophycean members exhibit conjugation as their mode of sexual reproduction?				b	<i>Spirogyra and Zygnema</i>
	a) <i>Clamydomonas and Volvox</i>	b) <i>Spirogyra and Zygnema</i>	c) <i>Ulothrix and Oedogonium</i>	d) <i>Chara and Nitella</i>		
61	A hollow spherical of colony mostly motile, consist of flagella, chlorophyll a and b in the thallus is called-				d	Coenobium
	a) Filament	b) Palmelloid	c) Siphon	d) Coenobium		
62	Fusion of a mature individual which directly act as a gametes and is responsible for reproduction in some green algae is called –				b	Hologamy
	a) Autogamy	b) Hologamy	c) Isogamy	d) Anisogamy		

63	The nuclear fusion phase where positive and negative nuclei fuse to form a diploid zygote nucleus is also known as				
	a) Karyogamy	b) Plasmogamy	c) Meiosis	d) Cell fusion	a) Karyogamy

64	A small generated cell that becomes large and separate from mother cells is a process of				
	a) Fermentation	b) Budding	c) Fragmentation	d) Fission	b) Budding
65	Which fungi division includes 'Club fungi'				
	a) Zygomycota	b) Deuteromycota	c) Basidiomycota	d) Ascomycota	c) Basidiomycota
66	What is the rate of biomass production called?				
	a) Productivity	b) Decomposition	c) Photosynthesis	d) Respiration	a) Productivity
67	Which of the following is a unit of productivity?				
	a) $g^{-2}$ or $kcal\ m^{-2}$	b) kcal	c) g	d) $g^{-2}\ yr^{-1}$ or $kcal\ m^{-2}\ yr^{-1}$	d) $g^{-2}\ yr^{-1}$ or $kcal\ m^{-2}\ yr^{-1}$
68	What are the two types of primary productivity?				
	a) Gross primary productivity and secondary productivity	b) Net primary productivity and secondary productivity	c) Net and Gross primary productivity	d) Net primary productivity and tertiary productivity	e) Net and Gross primary productivity
69	If a population has higher number of younger age group individuals, it is because of:				
	a) Long life span and low birth rate	b) Short life span and high birth rate	c) Short life span and low birth rate	d) Birth rate is equal to death rate	b) Short life span and high birth rate
70	The natural place of an organism or community is known as				
	a) Niche	b) Biome	c) Habitat	d) Habit	a) Niche
71	Plants growing under direct sunlight are known as				
	a) Heliophytes	b) Sciophytes	c) Psamophytes	d) Dicots	a) Heliophytes

72	Which statement is correct with respect to the food chain?				
	a) Every component of the food chain forms a trophic level	b) Inter-relation between different food chains is known as a food web	c) All the chains formed by nutritional relations is used to understand energy flow.	d) All of the above	d) All of the above
73	The bottom area where production is less than respiration in a pond ecosystem is termed as				
	a) Profundal zone	b) Tidal zone	c) Benthic zone	d) Limnetic zone	a) Profundal zone
74	Which is not the characteristic of 'r' selected species?				
	a) Reproduce quickly	b) Parental care	c) A low survival rate of progenies	d) Produce a large number of progenies	b) Parental care
75	Allelopathy refers to				
	a) Inhibition of growth of one species by another by the production of toxins	b) Inhibition of sporulation of pathogen by the host	c) Altering the reproductive cycle of one organism by another	d) Inhibition of growth of one species by another by preventing reproduction	a) Inhibition of growth of one species by another by the production of toxins
76	The upper part of an aquatic ecosystem contains				
	a) Nekton	b) Plankton	c) Benthos	d) both (a) and (b)	b) Plankton
77	Plant species with a wide range of genetic distribution evolve into a local population known as				
	a) Ecotype	b) Population	c) Ecosystem	d) Biome	a) Ecotype
78	The term ecosystem was proposed by				
	a) Lindeman	b) AG Tansley	c) Grinnel	d) Turesson	b) AG Tansley
79	Acid rain is a result of:				

	a) Excess amount CO <sub>2</sub>	b) Excess amount of NH <sub>3</sub>	c) Excess amount of SO <sub>2</sub> and NO <sub>2</sub>	d) Excess carbon monoxide	e) Excess amount of SO <sub>2</sub> and NO <sub>2</sub>
80	The greenhouse effect in the atmosphere is produced due to				
	a) Absorption and re-emission of infrared radiation by the atmosphere	b) Absorption and re-emission of ultra violet radiation by the atmosphere	c) Absorption and re-emission of visible light by the atmosphere	d) Absorption and re-emission of visible light by clouds	e) Absorption and re-emission of infrared radiation by the atmosphere
81	Which statement is correct with respect to the food chain?				
	a) Every component of food chain forms trophic level	b) Inter-relation between different food chains is known as a food web	c) All the chains formed by nutritional relations is used to understand energy flow.	d) All of the above	e) All of the above

82	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		
83	<b>Net primary productivity is represented by</b>				a	NPP=GP P-R
	a) NPP=GPP-R	b) NPP=GPP+R	c) NPP=GPP/R	d) NPP=GP P-1		

84	<b>Y-Shaped energy flow model is also referred as</b>				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		
85	The fraction of total amount of a substance in a component which is released in a given length of time is called				b	Turnover rate
	a) Turnover time	b) Turnover rate	c) Released rate	d) accumulation time		
86	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		
87	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		
88	Relationship between plant density and its biomass is called				d	self-thinning
	a) interspecific relationship	b) Carrying capacity curve	c) density dependence curve	d) self-thinning		

				curve		curve
89	The population that have relatively constant density at or near the carrying capacity of the environment id called				a	k-selected
	a)k-selected	b)r-selected	c)k and r-selected	d)all the above		
90	The general appearance of the vegetation as determined by the growth form of dominant species is termed as					Physiognomy
	a)Phenology	b)Physiognomy	c)Stratification	d) Geophytes	b	
91	The community which becomes stabilised at any of the seral stage is called					
	a)Climax community	b)Sereclimax	c)Sub climax	d)Disclimax	b	Sereclimax
92	The community which becomes more or less stable due to recurrent disturbance by man or other biotic factor is called					Disclimax
	a) Climax community	b) Sereclimax	c) Sub climax	d) Disclimax	d	
93	Microbial communities grow on solid surfaces to produce multi-layered complexes called					
	a) Bioscrubbers	b) Biofilters	c) Biofilms	d) biolayers	b	Biofilms
94	The survival of the population as a result of functional adjustments of organisms with different ecological conditions is called				c	Ecophysiology
	a) Ecological genetics	b) Palaeoecology	c) Ecophysiology	d) Chemical ecology		
95	<b>The study dealing with group of organisms which are associated together as a unit is called</b>					



	a) Autecology	b) Synecology	c) habitat ecology	d) production ecology	b	Synecology
96	<b>The branch of ecology which deals with the ecology of population is called</b>				c	Demecology
	a) habitat ecology	b) ecosystem ecology	c) Demecology	d) Taxonomic ecology		
97	<b>The product of total barometric pressure times the concentration of dry weight is called</b>				a	Partial pressure
	a) Partial pressure	b) atmospheric pressure	c) vapour pressure	d) room pressure		
98	<b>Water has the greatest ..... of all liquid except mercury</b>				b	Surface tension
	a) viscosity	b) surface tension	c) buoyancy	d) none of the above		
99	<b>Soil permeability is directly dependent on</b>				b	Pore size
	a) Gravitational water	b) Pore size	c) Soil water	d) Soil density		
100	<b>The density per unit total space is called</b>				a	Crude density
	a) Crude density	b) Ecological density	c) Biomass density	d) Specific density		

**SPACE FOR ROUGH WORK**