T-13

### **ENTRANCE EXAMINATIONS – 2019**

M.Sc. Animal Biology & Biotechnology

Hall Ticket No.		
	 	100

Time: 2 hours

Max. Marks: 100

### INSTRUCTIONS: PLEASE READ BEFORE ANSWERING!

- > Enter your hall ticket number on this sheet and the answer (OMR) sheet.
- Answers have to be marked on the OMR answer sheet following the instructions provided there upon. Make sure that you have clearly mentioned the Booklet Code (A or B or C) on your OMR sheet.
- > Hand over OMR answer sheet at the end of the examination.
- > All questions carry one mark each. Answer all, or as many as you can.
- > 0.33 mark will be deducted for every wrong answer.
- > There are a total of 11 pages in this question paper. Answer sheet (OMR) will be provided separately. Check this before you start answering.
- > The question paper consists of Part A and Part B. The marks obtained in Part A will be taken in consideration in case of a tie i.e., when more than one student gets equal marks, to prepare the merit list.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### PART "A"

- 1. Nucleosome consists of
- A) 146 bp DNA wrapped around H2A, H2B, H3 and H4
- C) 146 bp DNA wrapped around 2 copies each of H2A, H2B, H3 and H4
- B) 164 bp DNA wrapped around H2A, H2B, H3 and H4
- D) 164 bp DNA wrapped around 2 copies each of H2A, H2B, H3 and H4
- 2. An example of hemimetabolous insect is
  - A) Oncopeltus fasciatus

B) Vespula vulgaris

C) Musca domestica

- D) Apis indica
- 3. Which of the following compounds have highest dipole moment?
  - A) Dichloromethane

B) Chloroform

C) Chloromethane

D) Carbon

4. A A)	Autophagy is facilitated by Ribosomes		
C)	Lysosomes	B) D)	
5. I	Fats and oils are		
$\mathbf{A}$	Monoesters of glycerol	B)	Diesters of glycerol
C)		D)	
6. Fı	unction of GABA in central nervous syst	em is	•
A)	Neuronal inhibition	B)	Neuronal activation
- C)	Glial cell inhibition	D)	• •
7. Tł	ne total entropy of the universe is		
	Always increasing	B)	Neither increasing nor decreasing
C)	Always decreasing	D)	
8. M	lalaria is transmitted by one of the follow	ving sp	pecies of mosquito
A)	Culex	B)	Aedes
C)	Anopheles	D)	Albuginosus
9. Po	lymerase Chain Reaction was invented b	y	
A)	Kary Mullis	B)	Francis Crick
C)	David Baltimore	D)	Tim Hunt
10. V	hich one of the following compounds w	ill giv	e a positive iodoform test?
A)	Benzaldehyde	B)	2- Pentanone
C)	3-Hexanone	D)	3- Pentanone
11. •	Which one of the following is an animal	sterol'	<b>)</b>
A)	Ergo sterol	B)	Stigma sterol
C)	Sitosterol	D)	Cholesterol
2. T	he SI unit of radioactivity is		
A)	Hertz	B)	Lumen
C)	Becquerel	D)	Telsa
3. A	Il of the following are CD4+ cells, excep	t	
A)	Monocytes	B)	T-helper cells
C)	T-cytotoxic cells	D)	Macrophages
4. W	Thich one of the following metal ions ation endonucleases?	is rec	quired for the enzymatic cleavage of type II
A)	Ca <sup>2+</sup>	B)	Mg <sup>2+</sup>
C)	Al <sup>+3</sup>	D)	Mn <sup>+2</sup>
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greate	r than the mass of the metal?	of oxy	gen. How many times is the mass of its oxide
A)	1.5 times	B)	2 times
C)	3 times	D)	4 times
16. In	vertebrates breathe through		
A)	Skin and air sac	B)	Gills and skin
C)	Trachea and air sac	D)	Trachea and lungs
17. W	hich group of vertebrates have highest nu	ımber	of endangered species?
A)	Pisces	B)	Mammals
C)	Reptiles	D)	Aves
18. B	runner's glands are present in		
A)		B)	Submucosa of stomach
C)	Mucosa of oesophagus	D)	Mucosa of ileum
19. CI	nromatography is a technique based on		
A)	Adsorption and then dispersion of	B)	Evaporation and then dispersion of
	solute		solvent
C)	Hydration of solute	D)	Evaporation of solute
	nmortal Jellyfish belongs to	<b></b> .	
A)		B)	Echinodermata
C)	Coelenterata	D)	Chordata
	n 1.2 kb fragment of DNA has a unique estriction digested with these two enzymen		or EcoRI at 400 bp and a PstI site at 550 bp. If ich set of fragments will be generated?
	400,150 and 650 bp		400, 800 and 550 bp
C)	400, 550 and 650 bp	D)	400 and 550 bp
22. C	yclic ether with three membered ring are	called	i
A)	Lactones	B)	Oxiranes
C)	Alkoxides	, <b>D</b> )	Epoxy resins
	elect mismatch option		
A)	Centriole: 9+0	B)	Cilia: 9+2
C)	Fimbriae: Conjugation	D)	Middle lamella : lignin
	ne number of double stranded DNA copie of cycles of PCR are	s obta	ained from one double stranded DNA template
A)	32	B)	128
c)	168	D)	132

	• •		the n=6 to the n=4 level, the radiation emitted
	which series of lines in the spectrum of ato		•
•	Lyman	B)	Balmer
C)	Paschen	D)	Brackett
	PA	RT "	<b>B</b> "
26 A	living fossil found only in New Zealand i	c	
A)	Tautara	з В)	Agamid
C)	Trionchid	D)	Emydid
27. In	arterial blood, CO2 is majorly transporte	d as	
A)	Bicarbonate	B)	Carbamino hemoglobin
C)	Carbonic acid	D)	Carboxyhemoglobin
28. H	ypocalcemia is caused due to under secre	tion (	of ·
A)	Thyroxine	B)	Parathormone
C)	Calcitonin	D)	Glucagon
29. W	hen ethylene glycol is heated with concer	ntrate	d HNO3 it forms
A)	Oxalic acid	B)	Éthylene oxide
C)	Dioxane	D)	Diethylene glycol
	Red tides" are caused by large numbers of		
A)	Dinoflagellates	B)	Zooflagellates
C)	Green algae	D)	Diatoms
	NA is highly viscous because of		
A)	Large ratio of length versus diameter	B)	Coiling of two strands around an axis
C)	DNA interacting with histone proteins	D)	Nitrogenous bases of each strand held by hydrogen bonds
		ooled	d before it can be liquefied by compression is
called A)		B)	Critical temperature
C)	Liquefication temperature	D)	Inversion temperature
,	•	,	mvototon temperature
	Chaperon does one of the following function		D. C. 1.1 C
A)	Synthesizes proteins	B)	Refolding of proteins
C)	Unfolds proteins	D)	Degradation of proteins
	chromosome painting technique is also kn		
A)	ChIP	B)	FISH
C)	ISH	D)	Karyotyping

35. W	hich one of the following is not related to	Bac <sub>1</sub>	teriophage?
A)	Plasmid	B)	Phagemid
C)	Cosmid	D)	BAC
			ds to supercool, its temperature drops below
	ng point and then rises suddenly. What	is the	source of heat which causes the temperature
rise?	The data cons	<b>D</b> )	TN d.t. o
A)	The enthalpy of fusion	B)	The enthalpy of evaporation
C)	The enthalpy of submilation	D)	The enthalpy of deposition
	ntibiotic which can inhibit bacterial cell v	_	
A)	Chloramphenicol	B)	Tetracycline
C)	Penicillin	D)	Streptomycin
38. Is	sopropyl alcohol reacts with acidic sodiun	n dich	promate to give
A)	Acetaldehyde	B)	Acetic acid
C)	Propionic acid	D)	Acetone
39. TI	he symbiotic relationship between barnac	les an	d whales is
A)	Commensalism	B)	Neutralism
C)	Parasitism	D)	Mutalism
40. M	leiosis arrest in ovary happens at		
A)	Diplotene of Meiosis I	B)	Diakinesis of Meiosis I
C)	Pachytene of Meiosis I	D)	Zygotene of Meiosis I
41. O	ne of the following is an egg laying mam	mal	
A)	Pangolin	B)	Porcupine
C)	Tachyglossus	D)	Bat
42. A	n azeotropic solution of two liquids has a	ı boili	ng point lower than either of them when it
A)	Shows negative deviation from Roult's law	B)	Shows positive deviation from Roult's law
C)		D)	Is saturated
43. A	If are non-essential fatty acids except		
A)	Palmitic acid	B)	Linolenic acid
C)	Oleic acid	D)	Steric acid
<b>44.</b> T	The storage form of carbohydrate in liver	is	
A)	Glycogen	B)	Sucrose
C)	Galactose	D)	Glucose
,			

	ne migration of positi	vely charg	ed collo	idal	particles under an electric field towards the
A)	Cataphoresis			B)	Electro-osmosis
<b>C</b> )	Sedimentation		v	D)	Electrodialysis
46. E	aculovirus expression	system can	be best	used	in
A)	Bacteria			B)	Yeast
C)	Mammalian cell			D)	Insect cell
47. T	he Kozack consensus	sequence w	as origi	nally	defined as
A)	GCCGUGG			B)	ACCAUGG
C)	AUGGACC			D)	AUGGAUG
48. W	hen an ideal gas expan	ds in vacuu	ım, worl	c don	e is
A)	R			B)	3/2R
C)	4R			D)	0
49. Th	e formula representing	g exponenti	al growt	h rate	e of a population is
A)	dt/dN = rN			B)	rN/dN =dt
C)	dN/dt = rN			D)	dN/rN = dt
50. T	he priming function in	glycogen s	ynthesis	is ca	rried out by
A)	Lysine			B)	Arginine
C)	Glycogenin			D)	Glutamate
51. W	hich one of the follow	ing is not a	hermap	hrodi	ite?
A)	Earthworm			B)	Tilapia
C)	Killifish			D)	Pulmonate snail
52. In	tracellular store of Cal	cium is			•
A)	Golgi			B)	Endoplasmic reticulum
C)	Cytoplasm			D)	Nucleus
53. H	ow many isomers are	possible for	pentan	e?	
A)	2			B)	3
C)	4			D)	5
54. W	hich of the following i	is not true a	bout ret	rovirı	uses? They are characterized by
A)	The presence of an R	NA genom	e	B)	Reverse transcriptase
C)	They integrate chromosome	into	host	D)	They carry their own reverse transcriptase and can produce progeny without a host

55. In	humans and mammals the main nitroger	ious v	vaste is
A)	Urea	B)	Uric acid
C)	Ammonia	D)	Amino acids
56. W	hich of the following enzymes is present	in the	e snake venom?
A)	Phospholipase A1	B)	Phospholipase A2
C)	Phospholipase B	D)	Phospholipase D
	Jse and disuse theory was elaborated by		
	Jean-Baptist Lamarck	B)	Charles Darwin
C)	J B S Haldane	D)	August Weisman
58. V	Which of the following is a carbohydrate	with n	o nutritional value
A)	Glycogen	B)	Starch
C)	Dextrin	D)	Cellulose
59. M	lost important reason for the declining tre	end of	· · ·
A)	Habitat destruction	B)	Habitat pollution
C)	Exotic species introduction	D)	Over exploitation
	Kinetic energy of an article of 20g is 4 jo . Hence velocity ratio of their motion is	ule w	hile that of another article of same mass is 16
A)	1:4	B)	4:1
C)	1:2	D)	2:1
61. A	virus mediated delivery of DNA into ma	ımmal	ian cells is called
A)	Transformation	B)	Transfection
C)	Transduction	D)	Transversion
62. T	he term "Open mitosis" is used in the fol	llowin	g context
A)	Nuclear envelop breaks down before the chromosomes separate	B)	Nuclear envelop breaks down after the chromosomes separate
C)	Nuclear division happens without cytokinesis	D)	Segregation of homologous chromosomes without chiasmata formation
63. T	he following amino acid does not contrib	oute th	e fluorescence of a protein
A)	Tryptophan	B)	Tyrosine
C)	Serine	D)	Phenylalanine
64. W	hich one of the following is not a hallma	rk of	
A)	Self-sufficiency in growth signals	B)	Insensitivity to anti-growth signals
C)	Sustained angiogenesis	D)	Halted angiogenesis

65. V A)	When chloroform is heated with aqueous N Formic acid	аОН, В)	it gives Sodium formate
C)	Acetic acid	D)	Sodium acetate
66. A	ngiogenesis refers to generation of new		
A)		B)	Blood cells
C)	Cancer cells	D)	Blood vessels
	The most common configuration of amino a	acids	and DNA respectively is
A)	L and B	B)	D and B
C)	D and Z	D)	L and Z
68. T	he theory of evolution by natural selection	was i	independently developed by
	Charles Lyell and Charles Darwin	B)	Charles Darwin and Alfred Wallace
C)	Erasmus Darwin and Jean-Baptist Lamarck	D)	Charles Lyell and James Hutton
69. E	nthalpy content is zero in one of the follow	ing	
A)	H (g)	B)	CaCO <sub>3</sub> (s)
C)	$H_2O(1)$	D)	Na (s)
	The specificity of an antibody is due to		
A)	Its valence	B)	The heavy chain
C)	The Fc portion of the molecule	D)	The variable portion of the heavy and light chain
7 <u>1</u> . 1	The process by which a malignant cell spre	ads in	the body is called
A)	Homeostasis	B)	Metastasis
C)	Epistasis	D)	Microstasis
72. 7	The first part of small intestine is		
A)	Cecum	B)	Jejunum
C)	Ileum	D)	Duodenum
73. V	Which one of the following compounds wil		
A)	1-Butene	B)	1-Butyne
C)	2-Butene	D)	2-Butyne
	Which one of the following is a polymer of		
•	Inulin	B)	Dextrin
C)	Cellulose	D)	Glycogen

			erization. If cytochalasin is added to cultured
	nalian cells that have just begun mitosis,		· · · · · · · · · · · · · · · · · · ·
A)	Cells with arrest at metaphase	B)	Mitosis will complete but cytokinesis gets arrested
C)	Cells will arrest at telophase	D)	Mitosis will not proceed beyond prophase
76. W	hich one of the following is incorrect about	out the	
A)	α-helix and β-sheet are examples of	B)	Aromatic amino acids participate in β-
	secondary structure	·	sheet formation
C)	Intermolecular and intramolecular hydrogen bonds are important in	D)	Glycine and Alanine are abundant in β-pleated sheets
	stabilizing secondary structure		
77. V	Vith regard to DNA quantity, the correct of	order	for different phases of cell cycle is
A)	G1>S>G2	B)	S>G2>G1
C)	G2>S>G1	D)	G1 <g2<s< td=""></g2<s<>
78. E	ffect of temperature on viscosity is given	by	•
A)	Hole theory	B)	Arrhenious theory
C)	Adsorption theory	D)	Collision theory
79. W	Which one of the following is a substrate s	pecif	ic enzyme?
	Hexokinase	B)	Thiokinase
C)	Lactase	D)	Decarboxylase
80. C	onjugate base of Zn <sup>2+</sup> is		
A)	Zn(OH) <sup>+</sup>	B)	$Zn(OH)_2$
C)	ZnO	D)	Zn(H2O)2+
<b>8</b> 1. T	he three domains of life in biology are		
	Archaea, Eukarya, Bacteria	B)	Protista, Eubacteria, Eukarya
C)	Archaea, Eubacteria, Eukarya	D)	Prokarya, Bacteria, Archaea
82. T	he first immunoglobulin heavy chain tha	ıt is e	xpressed on the surface of newly produced E
cells i	is		
A)	IgA	B)	IgD
C)	IgG	D)	IgM
83. A	gametophyte is a plant that produc	ces ga	imetes by
A)	Haploid; meiosis	B)	Diploid; meiosis
C)	Haploid; mitosis	D)	Diploid; mitosis
84. T	he pathway for glucose synthesis by non-	-carbo	phydrate precursors is
	Glycogenesis	B)	
C)	Gluconeogenesis	D)	• •

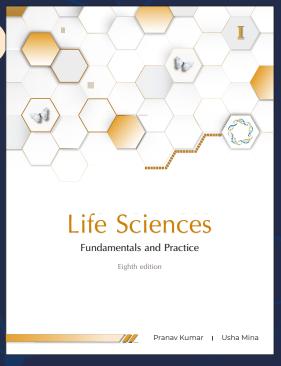
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	ptical isomers that are not mirror image: Diastereomers	s are ca B)	Enantiomers
•	Metamers	D)	Mesocompounds
86. T	he enzyme that catalyzes the direct tra	ınsfer	and incorporation of oxygen into a substrate
molec	cules is known as		*
A)	Oxidase	B)	Oxygenase
C)	Peroxidase	D)	Hydrolase
87. T	he ecological pyramid that is always stra	aight is	
A)	Pyramid of number	_	Pyramid of biomass
C)	Pyramid of energy	D)	Pyramid of types
	cetone undergoes reduction with hydraz	zine in	the presence of NaOH to form propane. This
A)	Clemmensen reaction	B)	Wolf-Kisnér reduction
C)	Rosemund reduction	D)	Reimer-Tiemann reaction
89. A	llosteric inhibitor of an enzyme		
	Enhances catalytic action	B)	Binds to active site
(C)	Enacts feedback regulation	D)	Denatures it
90. W	hich one of the following nutrients is ric	ch in cl	holesterol?
A)	Fish	B)	Egg Yolk
C)	Pulses	D)	Cereals
91. <b>·</b> Iı	ntegrity of DNA is assessed at this check	point	
A)	G2	B)	M
C)	Gl	D)	S
92. I	n a mercury battery the cathode is made	up of	
A)	Zn	B)	ZnO in contact with steel
C)	Steel in contact with HgO	D)	Zn in contact with HgO
93. T	The major role of Golgi apparatus is		
A)	Glycosylation of lipids and proteins	B)	Phosphorylation of lipids and proteins
C)	Acetylation of lipids and proteins	D)	Ubiquitination of lipids and proteins
	If there are only 20 individuals left in a the category	popu	lation then as per the IUCN, it would be kept
A)	. <del>-</del> •	B)	Endangered
C	Critically endangered	D)	Rare

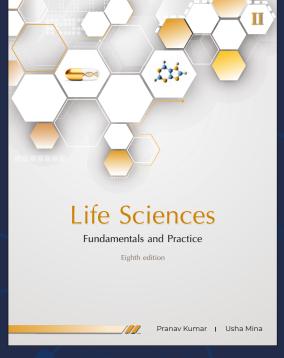
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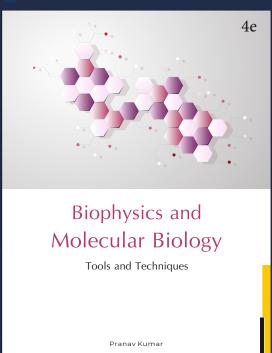
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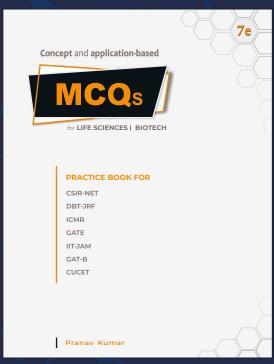
For r	ough work		
C)	Oxytocin	D)	Corticosterone
A)	Vasopressin	B)	Aldosterone
100.	Which one of the following hormones is	s not rel	ated to osmoregulation?
C)	Fructose-1,6 bisphosphate	D)	Phosphoenolpyruvate (PEP)
A)	ound? Fructose-6-P	B)	Glyceraldehyde-3-P
used	to form ATP. Which one of the following		a high-energy phosphate compound and the intermediates of glycolysis is a high energy
C)	Polynucleotide kinase	D)	Reverse transcriptase
		•	~ ·
96. 1 A)	•	B)	RNA polymerase I
ר אם	The enzyme that synthesizes DNA from	an mPN	NA templata is
C)	Circulatory system	D)	Respiratory system
A)	Nervous system	B)	Digestive system
97. E	ctoderm gives rise to		•
C)	Keratin	D)	Actin
•	Rhodopsin	B)	Myelin
	The photosensitive part of rod cells are i		
-,		~)	
C)	Ethyl iodide	D)	n-Propyl iodide
A)	Methyl iodide	B)	Isopropyl iodide











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### **Entrance Examinations - 2019**

School/Department/Centre

: School of Life Sciences, Dept of Animal Biology

Course/Subject

: M.Sc Animal Biology and Biotechnology (Set A revised)

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
1	С	26	Α	51	В	76	В
2	Α	27	Α	52	В	77	С
3	С	28	В	53	В	78	Α
4	С	29	Α	54	D	79	С
5	С	30	Α	55	Α	80	Α
6	Α	31	Α	56	В	81	Α
7	Α	32	В	57	Α	82	D
8	С	33	В	58	D	83	С
9	Α	34	В	59	Α	84	C
10	В	35	A and D *	60	C	85	Α
11	D	36	A	61	С	86	В
12	С	37	С	62	Α	87	С
13	С	38	D	63	С	88	В
14	В	39	А	64	D	89	С
15	Α	40	A	65	8	90	В
16	В	41	С	66	D	91	С
17	В	42	В	67	A	92	С
18	Α	43	В	68	В	93	Α
19	Α	44	Α	69	D	94	С
20	С	45	А	70	D	95	С
21	А	46	D	71	В	96	Α
22	В	47	В	72	D	97	Α
23	C and D *	48	D	73	В	98	D
24	В	49	С	74	Α	99	D
25	D	50	С	75	В	100	D

Note/Remarks: \* For Q. No 23 and 35 benefit will be given to all candidates

Signature School/Department/Centre