Total No. of Printed Pages: 21

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SET-X

Ph.D./URS-EE-Jan-2022

SUBJECT: Life Sciences

		Sr. No. 10220
Time : 11/4 Hours	Max. Marks: 100	Total Questions: 100
Roll No. (in figures)	(in words)	
Name	Father's Name	
Mother's Name	Date of Examination	
(Signature of the Candidate)	_	(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

- 1. All questions are compulsory.
- 2. The candidates must return the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A, B, C & D code will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examination in writing/through E.Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
- 5. The candidate *must not* do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers *must not* be ticked in the question booklet.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

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1.	For better resolution of minute protein be staining method is advised?	ands in an SDS-PAGE, which of the following
	(1) Silver staining	(2) CBB staining
	(3) Avidin staining	(4) All of these
2.	Synthesis of peptide bond is catalysed b	y:
	(1) A site of ribosome	(2) P site of ribosome
	(3) 23S rRNA	(4) tRNA
3.	Which of the following techniques wor	uld be most useful to identify and quantify the substance?
	(1) NMR	(2) MS
	(3) IR	(4) HPLC
4.	Chaperon proteins help in:	
	(1) Protein folding and assembly	(2) Protein stability
`	(3) Both (1) & (2)	(4) None of these
5.	Which of the following post translation lumen of the endoplasmic reticulum	onal modification of proteins does not occur in
	(1) A Glycosylation	
	(2) Formation of disulphide bonds	
	(3) Folding and formation of quaternar	y structure
	(4) Ubiquitination	
6.	Red Data Book is published by :	
,	(1) IUCN	(2) UNESCO
	(3) WHO	(4) UNEP
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7.	The Indian Patent and Design Act enac	ted in :
	(1) 1910	(2) 1911
	(3) 2002	(4) 2005
8.	The Ames test is a mass screening appr	oach used for the detection of:
	(1) Toxins	
	(2) Mutagenic carcinogens	
	(3) Lactose intolerance	
	(4) Phenylketonuria	
9.	Theory of panspermia is proposed by:	
	(1) Aristotle	
	(2) Oparin and Haldane	
	(3) Richter and Arrhenius	
	(4) None of these	
40		
10.	A method to detect whether two muta genes is:	tions are located on the same gene or different
	(1) Generalised transduction	
	(2) Complementation analysis	
	(3) Hfr mapping	
151-21	(4) Karyotyping	
11.	Who proposed mutation theory:	
	(1) J. B. Lamarck	(2) Charles Darwin
	(3) Hugo de Vries	(4) Mendal
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	(SE1-A)/(A) THE REPORT OF THE PARTY OF T

12	2. T4 polynucleotide kinase is used for :	
	(1) Labelling of 3 ends of DNA	,
	(2) Labelling 5 ends of DNA	
	(3) Creating blunt ends of DNA	
	(4) Dephosphorylation of DNA	
13	. Carbon dating method was developed by	y:
	(1) Willard Libby	(2) Bolt Wood
	(3) Simpson	(4) Mayer
14.	The discovery of Dinosaurian bones for Indicating that the Dinosaurs have survive	From the Intertrappean beds of a jar, Gujarat, wed in India even during the :
	(1) Permian	(2) Paleocene
	(3) Miocene	(4) Pleistocene.
15.	The major phenomenon responsible for	micro evolution and mega evolution:
	(1) Genetic drift	
	(2) Adaptative radiation	
	(3) Natural selection	
	(4) None of these	
16.	BAC which can be used for cloning large	e fragments, is derived from:
	(1) ColE plasmid	(2) F plasmid
	(3) 2μ plasmid	(4) Mu phage
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17.	An example of convergent evolution is:
	(1) Wing of Hawkmoths, the wing of hawks
	(2) Teeth of domestic dog, teeth of a wolf
	(3) Wings of Geospiza magnirostris, wings of Geospiza fortig
	(4) None of the above
18.	A reporter gene :
	(1) Acts as an activator
	(2) Allows gene expression to be readily measured
	(3) Enhances mRNA stability
	(4) Interacts with DNA polymerase
19.	The last common ancestor of humans is:
	(1) Pan troglodytes
	(2) Homo neanderthalensis
	(3) Lemuroidea
	(4) Dromaeosaurus
20.	Which of the following viruses replicate in cytoplasm?
	(1) SV40 (2) Adenovirus
	(3) Vaccinia virus (4) Herpes virus

- 21. Mycoplasma are not inhibited by penicillin because they:
 - (1) Produce penicillinase
 - (2) Are gram positive
 - (3) Are gram negative
 - (4) Don't have a cell wall

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22.	22. The following two organs are example of secondar	y lymphoid organs :
	(1) Spleen and thymus	
	(2) Lymph nodes and thymus	
	(3) Spleen and GALT	
	(4) Bone marrow and MALT	
23.	3. Which of the following does not participate in complexes?	the formation of antigen-antibody
	(1) Hydrophobic bonds	
	(2) Covalent bonds	
	(3) Electrostatic interactions	
	(4) Van der Waals forces	
24.	Cells that release histamine and other vasoactive are:	substances in response to allergens
	(1) Neutrophils (2) Macro	phages
	(3) NK cells (4) Mast c	eells
25		
25.	in in individual protein in individual official official official individual official o	
	(1) Transferrin (2) Album	in
	(3) Gamma globulin (4) Haemo	oglobin
26.	6. Which hormone binds to intracellular receptors?	
	(1) Insulin	
	(2) Growth hormone	
	(3) Triiodothyronine	
	(4) Thyroid stimulating hormone	
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27.	Thyroxine is important in the control of	:
	(1) Cellular metabolic rates	
	(2) Diabetes mellitus	
	(3) Mitochondrial respiration	
	(4) Calcium uptake	
28.	What percent of the incident solar photosynthesis?	energy do plants typically harvest during
	(1) 1-2 %	(2) 5-10%
	(3) 10-20%	(4) 20-50%
29.	Which man is known as Java man?	~
	(1) Ramapithecus	(2) Australopithecus
	(3) Pithecanthropus	(4) Sinanthropus
30.	Which one among the following is the m	nost important factor in speciation ?
	(1) Geographical isolation	
	(2) Reproductive isolation	
	(3) Ethological isolation	
	(4) Ecological isolation	
31.	Aroma in rice is due to:	
	(1) Acetyl choline	
	(2) 2-benzyl pyrroline	
	(3) 2-ethyl pyrroline	and the second s
	(4) 2-acetyl 1- pyrroline	and the second second
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32.	Primordial soup is a set of hypothetica	al conditions on ancient earth first proposed
	by	
	(1) Dmitri Ivanovsky	
	(2) Alexander Oparin	
	(3) Dmitry Anuchin	
	(4) Nikolay Shatsky	
33.	Which of the following is archaebacteria	?
	(1) Methanogens	
	(2) Mycoplasma	
	(3) Green sulphur bacteria	
	(4) Mycobacterium	
34.	The brain's ability to change in response	to experience or damage is called:
	(1) lateralization	(2) lesioning
	(3) neuroplasticity	(4) functionality
35.	Which of the following favours endospor	re formation:
	(1) High concentration of nitrogenous n	
	(2) Low concentration of nitrogenous nu	
		urients
	(3) Low concentration of oxygen	
	(4) None of the above	
36.	Recombinant DNase is used for the treat	ment of:
	(1) Cystic fibrosis	
		(2) Growth defects
	(3) Kidney disorder	(4) Multiple sclerosis
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3	7. A technique by w	hich protein of	interest can be puri	fied in a single step :	
	(1) Gel filtration	chromatograph	у		
	(2) Ion exchange	chromatograph	y		
	(3) Affinity chron	natography			
	(4) Hydrophobic i	nteraction chro	omatography		
38	3. The plasmodium causing their ruptu substance	ire. The ruptu	plies within the li	ver cells and then attac	iks RBCs of a toxic
	(1) Hirudin		(2) Heptoir		
	(3) Heparin		(4) Heamoz	coin	
39	. Organic molecules metabolism are call		ite quantities in foo	d but that are essential t	o normal
	(1) Coenzymes		(2) Vitamin	5	
	(3) Pro vitamins		(4) Cofactor	S .	
40.	In the human skelet in aerobic respiration.	al muscle and on is	brain cells, the ener	gy yield per molecule o the energy yield in a	f glucose naerobic
	(1) 2	(2) 19	(3) 16	(4) 18	
41.	Which of the follow	ing processes is	s involved in using	proteins as a source of er	nergy?
	(1) Oxidative deami	nation			
	(3) Ketogenesis			and the second second	
	(2) Glycolysis				
	(4) Beta oxidation				
нр/ц	URS-EE-2022/(Life Se	ciences)(SET-	X)/(A)	minutes and a second district and the	

42.	Which of the following substances are <i>NOT</i> stored in the body ?		
	(1) Amino acids	(2) Glycogen	
	(3) Triglyceride	(4) Cholesterol	
43.	Which of the following processes is invo	olved in converting amino acids into glucose?	
	(1) Glucogenolysis	(2) Transamination	
	(3) Gluconeogensis	(4) Lipogensis	
44.	In species where young are precocial, th	e father is more likely to be:	
	(1) Monogamous	(2) Polyandrous	
	(3) Polygamous	(4) Monoandrous	
45.	Polycistronic gene means:		
	(1) One transcription unit encodes one t	ranslation unit	
	(2) One translation unit organised in one transcription unit		
	(3) Several translation units organised in one transcription unit		
	(4) Several translation units organised i		
46.	The hormone that promotes rapid elong plant is	ation of internodes or petiole in deep water rice	
	(1) Ethylene	(2) Gibberllin	
	(3) Abscisic acid	(4) Cytokinin	
47.	Which of the following immunoglobut concentration?	alin is present normally in plasma at highest	
	(1) IgG	(2) IgM	
	(3) 1gA	(4) IgD	
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		P. T. O.	

48	. What is the ratio of hydrogen to oxyge	n molecules in a carbohydrate?
	(1) 1:1	(2) 1:2
	(3) 2:1	(4) 3:1
49.	Which of the following disrupts homeo	ostacie 9
	(1) Positive feedback	544515
	(2) Pressure filtration	
	(3) Thermoregulation	
	(4) Cellular respiration	
50.	Which of the Call	
50.	Which of the following is <i>not</i> a conjuga	ted protein ?
	(1) Peptone	(2) Phosphoprotein
	(3) Lipoprotein	(4) Chromoprotein
51.	Chitin is a:	
	(1) Polysaccharide	
	(2) Protein	
	(3) Nitrogenous Polysaccharide	
	(4) Lipoprotein	
	nill oddin	
52.]	Fluidity of bio-membranes can be shown	by:
. (1) Electron microscope	
(2) Tissue culture	
(.	3) Phase contrast-microscope	
(4	Fluorescence Microscope	

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53.	The extent bacterial group that is most mitochondria evolved is:	closely related to the	e ancestor from which
	(1) Cyanobacteria		
	(2) Purple photosynthetic bacteria		
	(3) Archaebacteria		
	(4) Mehanogens		
54.	Which of the following amino acids electrophoresis at a pH of 7.0?	migrates to the posit	ive electrode on paper
	(1) glutamic acid	(2) Histidine	
	(3) lysine	(4) Arginine	
55.	Lincoln index is used to measure:		
	(1) Population size		
	(2) Population mortality rate		
	(3) Population natality rate		
	(4) Population density		
56.	Which of the following is not a polypep	tide, ?	
	(1) Myoglobin	(2) α-keratin	
	(3) Heme	(4) Fibroin	
57.	When $[S] = K_M$, the velocity of an enzy	me catalyzed reaction	is about :
	(1) 0.5 V _{max}	(2) 0.4 V _{max}	
	(3) 0.2 V _{max}	(4) 0.9 V _{max}	
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58	. The most commonly employed cross-linked polymer is the :
	(1) Polyacrylamide gel
	(2) Collagen
	(3) Celluloses
	(4) Cation exchange resin
59.	Which of the following process offers the greatest opportunities for accelerating the evolution of new useful proteins?
	(1) Exon shuffling
	(2) Interon excision
	(3) Transposon insertion
	(4) DNA amplification
60.	Peripheral part of blastoderm where cells lie unseparated from yolk is termed as: (1) area opaca
	(2) area pellucida
	(3) area translucent
	(4) zone of junction
0.1	When are interference accounted in the hody 2
61.	When are interferons secreted in the body?
	(1) When antibody reacts with antigen
	(2) When lymphocytes become active
	(3) When serotonin become active
	(4) When the cells are infected with virus
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62.	CpG islands & codon bias are tools used in eukaryotic genomics to:
	(1) Identify ORF
	(2) Find regulatory sequences
	(3) Identify gene function
	(4) Find signal sequences
63.	How so many different antibodies are produced from less than 300 genes?
	(1) A Gene duplication
	(2) Alternate splicing
	(3) Formation of polyprotein
	(4) Recombination, deletions and random assortment of DNA fragments
64.	Two dimensional gels are used to :
	(1) Separate DNA fragments
	(2) Separate RNA fragments
	(3) Separate DNA & RNA fragments
	(4) Separate different proteins
65	. Variable number of tandem repeats (VNTRs) in the DNA molecule are highly useful in:
	(1) Monoclonal antibody production
	(2) DNA fingerprinting

(3) Recombinant DNA technology

(4) Stem cell culture

66.			
	surface of:	(2) yolk at vegetative pole	
	(1) yolk at animal pole	(4) none of above	
	(3) egg white at animal pole	(4) Hone s	
67.	Which is <i>not</i> a DNA binding Domain?		
	(1) Leucine zipper	(2) Helix turn helix	
	(3) Zinc finger	(4) Interon-exon-interon	
68.	Which is the most specific recombinant		
	(1) Genomic	(2) Protein	
	(3) C-RNA	(4) C DNA	
69.	. Gram negative bacterial cell wall contains higher content of :		
	(1) Peptidoglycan	(2) Lipid	
	(3) Protein	(4) Carbohydrate	
70.	Reverse transcriptase is:		
	(1) RNA dependent RNA polymerase		
	(2) DNA dependent RNA polymerase	•	
1923	(3) DNA dependent DNA polymerase		
	(4) RNA dependent DNA polymerase		
71.	In eukaryotic DNA replication lagging s	trand is formed by:	
	(1) RNA fragment	(2) Okazaki fragment	
	(3) DNA fragment	(4) Nucleotide fragment	
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72.	A quantitative way to measure the expre	ssion of a gene:		
	(1) PCT	(2) RT-PCR		
	(3) Real time RT-PCR	(4) Nested PCR		
73.	In positional cloning the starting point is	knowledge of the:		
	(1) Isolation of the gene			
	(2) DNA sequence flanking the gene			
	(3) Amino acid sequence of the gene			
			*	
	(4) DNA sequence of the gene			
74.	For culturing, plasma from the adult	chicken is preferred	to mammalian plasm	a
	because:			
	(1) It forms a clear and solid coagulum	even after dilution		
	(2) It is too opaque			
	(3) It doesn't produce solid clots			
	(4) It forms a semi solid coagulum	, **		
75.	Range of osmolarity tolerated/accepted i	n mOsm/Kg of H ₂ O by	mammalian cells is:	
	(1) 150-300	(2) 280-360	·	
	(3) 300-325	(4) 360-400		
76.	According to Eagle, the growth of L-s	train and Hela-strain	cultures require to hav	e
70.	mandatory presence of:			
	(1) 6 amino acids			
	(2) 8 amino acids			
	(3) 10 amino acids			
	(4) 12 amino acids			
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	. COO cuir	ed for culturing animal cells?
77.	What is the concentration of CO ₂ require	
	(1) 2-5%	(2) 1-10%
	(3) 10-15%	(4) 15-20%
78.	What are the main constituents of cultur	e for animal cell growth?
	(1) Glucose and Glutamine	
	(2) Growth factors	
	(3) Cytokines	
	(4) All of these	
79.	Protective covering over radical during s	seed germination is:
70.	(1) Suspensor	(2) Coleorhizha
	(3) Epithelium	(4) Coleoptile
80.	Little leaf disease is due to deficiency of	` :
	(1) Nitrogen	
	(2) Zinc	
	(3) Molybdenum	
	(4) Manganese	
	and the City of the compositive re	esulted from the inheritance of an unbalanced
81.	which of the following abhormanty, to complement of chromosomes can be dia	gnosed through karyotyping?
	(1) Down's syndrome	
	(2) Turner's syndrome	
	(3) Klinefelter's syndrome	
	(4) All of these	
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82.	A coefficient of correlation is computed to be – 0.95 means that :
	(1) The relationship between two variables is weak
	(2) The relationship between two variables is strong and positive
	(3) The relationship between two variables is strong but negative
	(4) Correlation coefficient cannot have these values
83.	What test statistic is used for a global test of significance?
	(1) Z test
	(2) T test
	(3) Chi-square test
	(4) F test
84.	Which of the following is the technique used for the embryo culture?
	(1) Organ cultures on plasma clots
	(2) Organ cultures on agar
	(3) Whole embryo cultures
	(4) All of these
85.	The first bioinformatics database was created by:
	(1) Richard Durbin
	(2) Dayhoff
	(3) Michael j. Dunn
	(4) Pearson
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86.	. Which of the following oncogenes is inc	correctly paired with its function?
	(1) hTERT: enzyme in DNA replication	1
	(2) ras: transcription factor	
	(3) HER-2/neu: growth factor receptor	
	(4) src: receptor-associated tyrosine kin	ase
87.	Distyly is :	
	(1) Presence of two styles in a flower	
	(2) Not self-incompatible	
	(3) A form of dichogamy	
	(4) A form of herchogamy	
88.	Which of the following is not a type of s	ignaling molecule ?
	(1) Testosterone	(2) Insulin
	(3) Adenylate Cyclase	(4) Thyroxin
89.	Epicatechin gallate (ECG) is a type of fla	avonoid, found in which of the following?
	(1) Orange	(2) Green tea
	(3) Berries	(4) Carrot
90.	Two balls are drawn at random with repred balls. Find the probability that both b	lacement from a box containing 10 black and valls are red:
	(1) 8/81	(2) 20/81
	(3) 16/81	(4) 40/81
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91.	Crypsis is a type of:	
(1	1) Offensive behavior	(2) Courtship behavior
(3	3) Defensive behavior	(4) Forging behavior
92. Sa	accharomyces cerivisiae is used for the	production of all of these except:
(1) Bread	(2) Beer
(3)) Brandy	(4) Cheese
	hich method of vinegar production recrobes prior to use?	equires that the product be filtered to remove
(1)	Trickle method	(2) Bubble method
(3)	Orleans method	(4) Open-Vat method
94. Wh	nich of the following is a secondary me	etabolite?
(1)	Tetracycline	(2) Citric acid
(3)	Ethanol	(4) None of these
	e strain of fungi used for the large scale	e production of citric acid is:
	Penicillium chrysogenum	
	Aspergillus. niger	
1 13	Streptomyces Aurecus	
(4)	Saccharomyces sps	
96. Juice	e clarification extraction is facilitated l	by using:
(1)	Amylase (2) Pectinase
		4) Lactase
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97.	Whey is the by-product in the manufacture of:		
	(1) Skimmed milk	(2) Butter	
	(3) Cheese	(4) Yogurt	
98.		pathogens in food products by-combining many processing, low temperature during storage,	
	(1) Mixed preservation approach		
	(2) High pressure food preservation		
	(3) Hurdle technology		
	(4) Stumbling technology		
99.	Cancer of β lymphocytes is called:		
	(1) Myeloma	(2) Sarcoma	
	(3) Melanoma	(4) Carcinoma	
100.	The technique of DNA finger printing v	vas given by ?	
	(1) Alec Jeffary	(2) Paul Terasaky	
	(3) James Clarke	(4) Franklin	
	*		

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PHD/URS-EE-2022/(Life Sciences)(SET-X)/(B)

1.	Which of the following processes is invo	olved in using proteins as a source of energy?	
	(1) Oxidative deamination	(3) Ketogenesis	
	(2) Glycolysis	(4) Beta oxidation	
2.	Which of the following substances are A	<i>NOT</i> stored in the body ?	
	(1) Amino acids	(2) Glycogen	
	(3) Triglyceride	(4) Cholesterol	
3.	Which of the following processes is invo	olved in converting amino acids into glucose?	
	(1) Glucogenolysis	(2) Transamination	
	(3) Gluconeogensis	(4) Lipogensis	
4.	In species where young are precocial, th	e father is more likely to be :	
	(1) Monogamous	(2) Polyandrous	
	(3) Polygamous	(4) Monoandrous	
5.	Polycistronic gene means :		
	(1) One transcription unit encodes one translation unit		
	(2) One translation unit organised in one transcription unit		
	(3) Several translation units organised i	n one transcription unit	
	(4) Several translation units organised i	n several transcription units	
	TI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
6	plant is	ation of internodes or petiole in deep water rice	
	(1) Ethylene	(2) Gibberllin	
	(3) Abscisic acid	(4) Cytokinin	
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7.	Which of the following immunoglobut concentration?	lin is present normally in plasma at highe	st		
	(1) IgG	(2) IgM			
	(3) 1gA	(4) IgD			
8.	What is the ratio of hydrogen to oxygen	molecules in a carbohydrate ?			
	(1) 1:1	(2) 1:2			
	(3) 2:1	(4) 3:1			
9.	Which of the following disrupts homeos	tasis?			
	(1) Positive feedback				
	(2) Pressure filtration	k .			
	(3) Thermoregulation				
	(4) Cellular respiration				
10.	Which of the following is not a conjugat	ted protein ?			
	(1) Peptone	(2) Phosphoprotein			
	(3) Lipoprotein	(4) Chromoprotein			
11.	Mycoplasma are not inhibited by penicil	llin because they:			
	(1) Produce penicillinase				
	(2) Are gram positive				
	(3) Are gram negative				
	(4) Don't have a cell wall				
HD/	HD/URS-EE-2022/(Life Sciences)(SET-X)/(B)				

12.	12. The following two organs are example of se	condary lymphoid organs :	
	(1) Spleen and thymus		
	(2) Lymph nodes and thymus		
	(3) Spleen and GALT		
	(4) Bone marrow and MALT		
13.	13. Which of the following does not particip complexes?	ate in the formation of antigen-and	tibody
	(1) Hydrophobic bonds		
	(2) Covalent bonds		
	(3) Electrostatic interactions		
	(4) Van der Waals forces		
14.	14. Cells that release histamine and other vaso	pactive substances in response to all	ergens
	are:		
		Macrophages	
	(3) NK cells) Mast cells	
15.	15. The most abundant protein in human blood		
	(1) Transferrin (2) Albumin	
	(3) Gamma globulin (4) Haemoglobin	
16.	16. Which hormone binds to intracellular recep	tors ?	
	(1) Insulin		
	(2) Growth hormone		
	(3) Trijodothyronine		
	(4) Thyroid stimulating hormone		
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17.	Thyroxine is important in the control	of:
	(1) Cellular metabolic rates	
	(2) Diabetes mellitus	
	(3) Mitochondrial respiration	,
	(4) Calcium uptake	
18.	What percent of the incident sole photosynthesis?	r energy do plants typically harvest during
×	(1) 1-2 %	(2) 5-10%
	(3) 10-20%	(4) 20-50%
19.	Which man is known as Java man?	
	(1) Ramapithecus	(2) Australopithecus
	(3) Pithecanthropus	(4) Sinanthropus
20.	Which one among the following is the	most important factor in speciation ?
	(1) Geographical isolation	(2) Reproductive isolation
	(3) Ethological isolation	(4) Ecological isolation
21.	For better resolution of minute protein staining method is advised?	bands in an SDS-PAGE, which of the following
	(1) Silver staining	(2) CBB staining
	(3) Avidin staining	(4) All of these
22.	Synthesis of peptide bond is catalysed b	by:
	(1) A site of ribosome	(2) P site of ribosome
	(3) 23S rRNA	(4) tRNA
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		and the suppose of the first of the first of the

23.	Which of the following techniques would be most useful to identify and quantify the presence of a known impurity in a drug substance?		identify and quantify the
	(1) NMR	(2) MS	
	(3) IR	(4) HPLC	
24.	Chaperon proteins help in:		
	(1) Protein folding and assembly	(2) Protein stability	
	(3) Both (1) & (2)	(4) None of these	,
25.	Which of the following post translation lumen of the endoplasmic reticulum	nal modification of p	proteins does not occur in
	(1) A Glycosylation		
	(2) Formation of disulphide bonds		
	(3) Folding and formation of quaternary	v structure	
	(4) Ubiquitination	, siructure	n .
26.	Red Data Book is published by:		
	(1) IUCN (2) UNESCO	(3) WHO	(4) UNEP
27.	The Indian Patent and Design Act enact	ted in :	
	(1) 1910 (2) 1911	(3) 2002	(4) 2005
28.	The Ames test is a mass screening appr	oach used for the dete	ection of
	(1) Toxins		edon or .
	(2) Mutagenic carcinogens		
	(3) Lactose intolerance		
	(4) Phenylketonuria		
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29	. Theory of panspermia is propos	sed by :
	(1) Aristotle	
	(2) Oparin and Haldane	
	(3) Richter and Arrhenius	
	(4) None of these	
30.	A method to detect whether to genes is:	vo mutations are located on the same gene or different
	(1) Generalised transduction	
	(2) Complementation analysis	
	(3) Hfr mapping	
	(4) Karyotyping	
31.	Crypsis is a type of:	
	(1) Offensive behavior	(2) Courtship behavior
	(3) Defensive behavior	(4) Forging behavior
32.	Saccharomyces cerivisiae is use	ed for the production of all of these except:
	(1) Bread	(2) Beer
	(3) Brandy	(4) Cheese
33.	Which method of vinegar production microbes prior to use?	luction requires that the product be filtered to remove
	(1) Trickle method	(2) Bubble method
	(3) Orleans method	(4) Open-Vat method
ID/U	RS-EE-2022/(Life Sciences)(SI	

34.	Which of the following is a secondary m	etabolite ?	
	(1) Tetracycline	(2) Citric acid	
	(3) Ethanol	(4) None of these	
35.	The strain of fungi used for the large sca	le production of citric acid is :	
	(1) Penicillium chrysogenum		
	(2) Aspergillus, niger		
	(3) Streptomyces Aurecus		
	(4) Saccharomyces sps		
36.	Juice clarification extraction is facilitate	d by using:	
	(1) Amylase	(2) Pectinase	
	(3) Inulinase	(4) Lactase	
37.	Whey is the by-product in the manufact	ure of:	
	(1) Skimmed milk	(2) Butter	
	(3) Cheese	(4) Yogurt	
38.		pathogens in food products by combining man	
	(1) Mixed preservation approach		
	(2) High pressure food preservation		
	(3) Hurdle technology		
	(4) Stumbling technology		
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39.	Cancer of β lymphocytes is called :			
	(1) Myeloma	(2)	Sarcoma	
	(3) Melanoma	(4)	Carcinoma	
40.	The technique of DNA finger printing w	as gi	ven by ?	
	(1) Alec Jeffary	(2)	Paul Terasaky	
	(3) James Clarke	(4)	Franklin	
41.	When are interferons secreted in the bod	ly?		
	(1) When antibody reacts with antigen			
	(2) When lymphocytes become active			
	(3) When serotonin become active			
	(4) When the cells are infected with vir	us		
42.	CnG islands & godon higs are tools upon	1 :	automostia accessica to c	
42.	CpG islands & codon bias are tools used (1) Identify ORF	1 IN (eukaryotic genomics to :	
	(2) Find regulatory sequences			
	(3) Identify gene function			
	(4) Find signal sequences			
	(4) I ma signal sequences			
43.	How so many different antibodies are p	rodu	iced from less than 300 gene	s ?
	(1) A Gene duplication			
	(2) Alternate splicing			
	(3) Formation of polyprotein			
	(4) Recombination, deletions and rand	om a	assortment of DNA fragment	ts
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44.	Two dimensional gels are used to:		
	(1) Separate DNA fragments		
	(2) Separate RNA fragments		
•	(3) Separate DNA & RNA fragments		
	(4) Separate different proteins	T.	
45.	Variable number of tandem repeats (V) in :	NTRs) in the DNA molecule are highly	useful
	(1) Monoclonal antibody production		
	(2) DNA fingerprinting		
	(3) Recombinant DNA technology		
	(4) Stem cell culture		
46.	In bird's egg, process of cell division is surface of:	confined to small disc of protoplasm lyi	ng on
	(1) yolk at animal pole	(2) yolk at vegetative pole	
	(3) egg white at animal pole	(4) none of above	
47	. Which is not a DNA binding Domain?		
	(1) Leucine zipper	(2) Helix turn helix	
	(3) Zinc finger	(4) Interon-exon-interon	
48	. Which is the most specific recombinant	library ?	
	(1) Genomic	(2) Protein	
	(3) C-RNA	(4) C DNA	
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49.	Gram negative bacterial cell wall contain	ns higher content of:	
	(1) Peptidoglycan	(2) Lipid	
	(3) Protein	(4) Carbohydrate	
50.	Reverse transcriptase is:		
	(1) RNA dependent RNA polymerase		
	(2) DNA dependent RNA polymerase		
	(3) DNA dependent DNA polymerase		
	(4) RNA dependent DNA polymerase		
51.	Aroma in rice is due to:		
	(1) Acetyl choline	(2) 2-benzyl pyrroline	
	(3) 2-ethyl pyrroline	(4) 2-acetyl 1- pyrroline	
		I andisions on ancient earth	first proposed
52.	Primordial soup is a set of hypothetic by	cal conditions on ancient earth	mst proposa
	(1) Dmitri Ivanovsky		
	(2) Alexander Oparin		
	(3) Dmitry Anuchin		
	(4) Nikolay Shatsky		
53.	Which of the following is archaebacteria	1?	
	(1) Methanogens		
	(2) Mycoplasma		
	(3) Green sulphur bacteria		
	(4) Mycobacterium		
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	(1) lateralization	(2) lesioning
	(3) neuroplasticity	(4) functionality
55.	Which of the following favours endospo	re formation :
	(1) High concentration of nitrogenous n	utrients
	(2) Low concentration of nitrogenous no	utrients
	(3) Low concentration of oxygen	
	(4) None of the above	
56.	Recombinant DNase is used for the treat	tment of:
	(1) Cystic fibrosis	(2) Growth defects
	(3) Kidney disorder	(4) Multiple sclerosis
57.	A technique by which protein of interest	can be purified in a single step:
	(1) Gel filtration chromatography	
	(2) Ion exchange chromatography	
	(3) Affinity chromatography	
	(4) Hydrophobic interaction chromatog	raphy
58.		within the liver cells and then attacks RBCs RBCs is associated with the release of a toxic
	(1) Hirudin	(2) Heptoin
	(3) Heparin	(4) Heamozoin
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54. The brain's ability to change in response to experience or damage is called:

		1.1 to normal
59.	Organic molecules found in minute quantities in food but that are essential to normal metabolism are called:	
	(1) Coenzymes	(2) Vitamins
,	(3) Pro vitamins	(4) Cofactors
60.	In the human skeletal muscle and brain in aerobic respiration is time respiration. (1) 2 (3) 16	cells, the energy yield per molecule of glucose es higher than the energy yield in anaerobic (2) 19 (4) 18
61.	In eukaryotic DNA replication lagging s	strand is formed by :
• • •	(1) RNA fragment	(2) Okazaki fragment
	(3) DNA fragment	(4) Nucleotide fragment
62.	A quantitative way to measure the expre	ession of a gene :
	(1) PCT	
	(2) RT-PCR	
	(3) Real time RT-PCR	
	(4) Nested PCR	
63.	In positional cloning the starting point is	s knowledge of the :
	(1) Isolation of the gene	
or egit	(2) DNA sequence flanking the gene	
	(3) Amino acid sequence of the gene	
	(4) DNA sequence of the gene	
	(4) DIAN seduction of the Barre	

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64.	For culturing, plasma from the adult chicken is preferred to mammalian plasma because:
	(1) It forms a clear and solid coagulum even after dilution
	(2) It is too opaque
	(3) It doesn't produce solid clots
	(4) It forms a semi solid coagulum
65.	
	(1) 150-300 (2) 280-360
	(3) 300-325 (4) 360-400
66	According to Eagle, the growth of L-strain and Hela-strain cultures require to have
00.	mandatory presence of:
	(1) 6 amino acids
	(2) 8 amino acids
	(3) 10 amino acids
	(4) 12 amino acids
67	What is the concentration of CO ₂ required for culturing animal cells?
	(1) 2-5% (2) 1-10%
	(3) 10-15% (4) 15-20%
6	B. What are the main constituents of culture for animal cell growth?
	(1) Glucose and Glutamine
	(2) Growth factors
	(3) Cytokines
	(4) All of these
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69. Protective covering over radical during seed germination is:		al during seed germination is:	
	(1) Suspensor	(2) Coleorhizha	
	(3) Epithelium	(4) Coleoptile	
70.	Little leaf disease is due to de	ficiency of:	
	(1) Nitrogen	(2) Zinc	
	(3) Molybdenum	(4) Manganese	
71.	71. Which of the following abnormality, resulted from the inheritance of an unball complement of chromosomes can be diagnosed through karyotyping?		
	(1) Down's syndrome		
	(2) Turner's syndrome		
	(3) Klinefelter's syndrome		
	(4) All of these		
72.	A coefficient of correlation is	computed to be -0.95 means that :	
	(1) The relationship between	two variables is weak	
	(2) The relationship between two variables is strong and positive		
	(3) The relationship between two variables is strong but negative		
	(4) Correlation coefficient ca	nnot have these values	
73.	. What test statistic is used for	a global test of significance ?	
	(1) Z test		
	(2) T test		
	(3) Chi-square test		
	(4) F test	The second second	
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74.	Which of	the	following	is	the	technique	used	for	the	embryo	culture	?
-----	----------	-----	-----------	----	-----	-----------	------	-----	-----	--------	---------	---

- (1) Organ cultures on plasma clots
- (2) Organ cultures on agar
- (3) Whole embryo cultures
- (4) All of these

75. The first bioinformatics database was created by :

- (1) Richard Durbin
- (2) Dayhoff
- (3) Michael j. Dunn
- (4) Pearson

76. Which of the following oncogenes is incorrectly paired with its function?

- (1) hTERT: enzyme in DNA replication
- (2) ras: transcription factor
- (3) HER-2/neu: growth factor receptor
- (4) src: receptor-associated tyrosine kinase

77. Distyly is:

- (1) Presence of two styles in a flower
- (2) Not self-incompatible
- (3) A form of dichogamy
- (4) A form of herchogamy

78.	Which of the following is <i>not</i> a type of s	signaling molecule?
	(1) Testosterone	(2) Insulin
	(3) Adenylate Cyclase	(4) Thyroxin
79.	Epicatechin gallate (ECG) is a type of fl	avonoid, found in which of the following?
	(1) Orange	(2) Green tea
	(3) Berries	(4) Carrot
80.	Two balls are drawn at random with repred balls. Find the probability that both be	placement from a box containing 10 black and 8 balls are red:
	(1) 8/81	(2) 20/81
	(3) 16/81	(4) 40/81
81.	Who proposed mutation theory:	
	(1) J. B. Lamarck	
	(2) Charles Darwin	
	(3) Hugo de Vries	
	(4) Mendal	
82.	T4 polynucleotide kinase is used for :	
	(1) Labelling of 3 ends of DNA	
	(2) Labelling 5 ends of DNA	
	(3) Creating blunt ends of DNA	
	(4) Dephosphorylation of DNA	
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83.	Carbon dating method was developed by:		
	(1) Willard Libby	(2) Bolt Wood	
	(3) Simpson	(4) Mayer	
84.	The discovery of Dinosaurian bones for Indicating that the Dinosaurs have survive	rom the Intertrappean beds of a jar, Gujarat, ved in India even during the :	
	(1) Permian	(2) Paleocene	
	(3) Miocene	(4) Pleistocene.	
3 4			
85.	The major phenomenon responsible for	micro evolution and mega evolution:	
	(1) Genetic drift		
	(2) Adaptative radiation		
	(3) Natural selection		
	(4) None of these		
86.	BAC which can be used for cloning large	ge fragments, is derived from:	
	(1) ColE plasmid	(2) F plasmid	
	(3) 2μ plasmid	(4) Mu phage	
87.	An example of convergent evolution is	:	
	(1) Wing of Hawkmoths, the wing of h	awks	
	(2) Teeth of domestic dog, teeth of a w	olf	
	(3) Wings of Geospiza magnirostris, w	ings of Geospiza fortis	
-	(4) None of the above		
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88.	A reporter gene :		
	(1) Acts as an activator		
	(2) Allows gene expression to be readily	y me	asured
	(3) Enhances mRNA stability		
	(4) Interacts with DNA polymerase		
89.	The last common ancestor of humans is	:	
	(1) Pan troglodytes	(2)	Homo neanderthalensis
	(3) Lemuroidea	(4)	Dromaeosaurus
90.	Which of the following viruses replicate	in c	ytoplasm ?
	(1) SV40	(2)	Adenovirus
	(3) Vaccinia virus	(4)	Herpes virus
91.	Chitin is a :		
	(1) Polysaccharide		
	(2) Protein		
	(3) Nitrogenous Polysaccharide		
	(4) Lipoprotein		
92.	Fluidity of bio-membranes can be shown	n by	:
	(1) Electron microscope		
	(2) Tissue culture		
	(3) Phase contrast-microscope		
	(4) Fluorescence Microscope		

93.	The extent bacterial group that is mo mitochondria evolved is:	st closely related to the ancestor from which
	(1) Cyanobacteria	
	(2) Purple photosynthetic bacteria	
	(3) Archaebacteria	
	(4) Mehanogens	
94.	Which of the following amino acids electrophoresis at a pH of 7.0 ?	migrates to the positive electrode on paper
	(1) glutamic acid	(2) Histidine
	(3) lysine	(4) Arginine
95.	Lincoln index is used to measure:	
	(1) Population size	
	(2) Population mortality rate	
	(3) Population natality rate	
	(4) Population density	
96.	Which of the following is not a polypep	tide ?
	(1) Myoglobin	(2) α-keratin
	(3) Heme	(4) Fibroin
97.	When $[S] = K_M$, the velocity of an enzyr	ne catalyzed reaction is about :
	(1) 0.5 V _{max}	(2) 0.4 V _{max}
	(3) 0.2 V _{max}	(4) 0.9 V _{max}
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98.	The most	commonly	employed	cross-linked	polymer	is	the	:
-----	----------	----------	----------	--------------	---------	----	-----	---

- (1) Polyacrylamide gel
- (2) Collagen
- (3) Celluloses
- (4) Cation exchange resin
- **99.** Which of the following process offers the greatest opportunities for accelerating the evolution of new useful proteins?
 - (1) Exon shuffling
 - (2) Interon excision
 - (3) Transposon insertion
 - (4) DNA amplification
- 100. Peripheral part of blastoderm where cells lie unseparated from yolk is termed as :
 - (1) area opaca
 - (2) area pellucida
 - (3) area translucent
 - (4) zone of junction

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SUBJECT: Life Sciences

		Sr. No
Time : 11/4 Hours	Max. Marks: 100	Total Questions: 100
Roll No. (in figures)	(in words)	
Name	Father's Name	
Mother's Name	Date of Examination	
(Signature of the Candidate)		(Signature of the Invigilator)
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- 1. All questions are compulsory.
- 2. The candidates must return the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A, B, C & D code will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examination in writing/through E.Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
- 5. The candidate must not do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers must not be ticked in the question booklet.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

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 (1) Skimmed milk (2) Butter (3) Cheese (4) Yogurt 18. The method of preventing or reducing pathogens in food products by combining methods like high temperature during processing, low temperature during increasing the acidity etc is called: (1) Mixed preservation approach (2) High pressure food preservation (3) Hurdle technology (4) Stumbling technology 19. Cancer of β lymphocytes is called: (1) Myeloma (2) Sarcoma (3) Melanoma (4) Carcinoma 20. The technique of DNA finger printing was given by? (1) Alec Jeffary (2) Paul Terasaky (3) James Clarke (4) Franklin 21. In eukaryotic DNA replication lagging strand is formed by: (1) RNA fragment (2) Okazaki fragment (3) DNA fragment (4) Nucleotide fragment 22. A quantitative way to measure the expression of a gene: (1) PCT (2) RT-PCR (3) Real time RT-PCR (4) Nested PCR 				
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(1) PCT (2) RT-PCR (3) Real time RT-PCR (4) Nested PCR		(3) DNA fragment		
(1) PCT (2) RT-PCR (3) Real time RT-PCR (4) Nested PCR	22.	A quantitative way to measure the expres	ession of a gene :	
(1) Hesteu FCK				
ID/IIRS-EE-2022/(Life Sciences)/SET V//C)		(3) Real time RT-PCR	(4) Nested PCR	
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23.	In positional cloning the starting point is knowledge of the:
	(1) Isolation of the gene
	(2) DNA sequence flanking the gene
	(3) Amino acid sequence of the gene
	(4) DNA sequence of the gene
24.	For culturing, plasma from the adult chicken is preferred to mammalian plasma because:
	(1) It forms a clear and solid coagulum even after dilution
	(2) It is too opaque
	(3) It doesn't produce solid clots
	(4) It forms a semi solid coagulum
25.	Range of osmolarity tolerated/accepted in mOsm/Kg of H ₂ O by mammalian cells is :
	(1) 150-300 (2) 280-360
	(3) 300-325 (4) 360-400
26.	According to Eagle, the growth of L-strain and Hela-strain cultures require to have mandatory presence of:
	(1) 6 amino acids
	(2) 8 amino acids
	(3) 10 amino acids
	(4) 12 amino acids
27	. What is the concentration of CO ₂ required for culturing animal cells?
	(1) 2-5% (2) 1-10%
	(3) 10-15% (4) 15-20%
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- 32. Fluidity of bio-membranes can be shown by:
 - (1) Electron microscope
 - (2) Tissue culture
 - (3) Phase contrast-microscope
 - (4) Fluorescence Microscope

33.	The extent bacterial group that is most mitochondria evolved is:	t closely related to the ancestor from which
	(1) Cyanobacteria	Strangelling (C)
	(2) Purple photosynthetic bacteria	assolution (C. T.
	(3) Archaebacteria	main apparlant anity 3-12-y
	(4) Mehanogens	all. Writeti of the following process utless
34.	Which of the following amino acids electrophoresis at a pH of 7.0?	migrates to the positive electrode on paper
	(1) glutamic acid	(2) Histidine
	(3) lysine	(4) Arginine
35.		pousantema AVO, (*)
	(1) Population size	40 Peripheral part of ble coderns where sells
	(2) Population mortality rate	(1), pres spage.
	(3) Population natality rate	ablanting rate (=)
	(4) Population density	(i) are translated (ii)
36.	Which of the following is not a polyper	otide?
	(1) Myoglobin	(2) α-keratin
	(3) Heme	(4) Fibroin
37	. When $[S] = K_M$, the velocity of an enzy	me catalyzed reaction is about:
	(1) 0.5 V _{max}	(2) 0.4 V _{max}
	(2) 0 2 1/	(4) 0.9 V _{max}

38.	The most	commonly	employed	cross-linked	polymer	is the	:
	1						

- (1) Polyacrylamide gel
- (2) Collagen
- (3) Celluloses
- (4) Cation exchange resin

39. Which of the following process offers the greatest opportunities for accelerating the evolution of new useful proteins?

- (1) Exon shuffling
- (2) Interon excision
- (3) Transposon insertion
- (4) DNA amplification

40. Peripheral part of blastoderm where cells lie unseparated from yolk is termed as :

- (1) area opaca
- (2) area pellucida
- (3) area translucent
- (4) zone of junction

41. Aroma in rice is due to:

- (1) Acetyl choline
- (2) 2-benzyl pyrroline
- (3) 2-ethyl pyrroline
- (4) 2-acetyl 1- pyrroline

42.	Primordial soup is a set of hypothetic	cal conditions on ancient earth first proposed
42.	by	editambio resolutione attis kiele (17)
	(1) Dmitri Ivanovsky	(CE) Codiencies caroangies (CE)
	(2) Alexander Oparin	Call Charles Company Company (E)
	(3) Dmitry Anuchin	engine in a tomorphism pidomicentorio 644
	(4) Nikolay Shatsky	
	property and the contract of the charter	to a contribute of the first order to be a selected.
43.		ia? tu est tous note torantina histor and esta-
	(1) Methanogens	mustal 11
	(2) Mycoplasma	The second of the second of
	(3) Green sulphur bacteria	
	(4) Mycobacterium	many harmon on bound resembles asset 150 - 60
44.	The brain's ability to change in respons	se to experience or damage is called:
44.	(1) lateralization	(2) lesioning
	(3) neuroplasticity	(4) functionality
45.	Which of the following favours endos	pore formation:
	(1) High concentration of nitrogenous	nutrients
	(2) Low concentration of nitrogenous	nutrients
	(3) Low concentration of oxygen	
	(4) None of the above	An entire direct management of the second
46.	Recombinant DNase is used for the tr	
	(1) Cystic fibrosis	(2) Growth defects
	(3) Kidney disorder	(4) Multiple sclerosis
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47.	A technique by which protein of interes	t can be purified in a single step:
	(1) Gel filtration chromatography	
	(2) Ion exchange chromatography	
	(3) Affinity chromatography	
	(4) Hydrophobic interaction chromatog	raphy
48.		vithin the liver cells and then attacks RBCs RBCs is associated with the release of a toxic
	(1) Hirudin	(2) Heptoin
	(3) Heparin	(4) Heamozoin
49.	Organic molecules found in minute qua	untities in food but that are essential to normal
	(1) Coenzymes	(2) Vitamins
	(3) Pro vitamins	(4) Cofactors
50.	In the human skeletal muscle and brain in aerobic respiration is time respiration.	cells, the energy yield per molecule of glucose s higher than the energy yield in anaerobic
	(1) 2 (2) 19	(3) 16 (4) 18
51.	Mycoplasma are not inhibited by penicill	in because they
	(1) Produce penicillinase	an occurse they .
	(2) Are gram positive	
	(3) Are gram negative	
	(4) Don't have a cell wall	
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52.	The following two organs are exa	mple of seco	ondary lymphoid organs :
	(1) Spleen and thymus		
	(2) Lymph nodes and thymus	300	
	(3) Spleen and GALT		
	(4) Bone marrow and MALT		story metall (1)
53.	Which of the following does no complexes?	not participa	te in the formation of antigen-antibody
	(1) Hydrophobic bonds		to a new the law to _ garage place to
	(2) Covalent bonds		
	(3) Electrostatic interactions		
	(4) Van der Waals forces		eriodmental (1) (f
54.			active substances in response to allergens
	are:	St. Michigan	
	(1) Neutrophils	(2)	Macrophages
	(3) NK cells	(4)	Mast cells
	The most shouldest most in in hou	man blood :	
55.			A lhumin
	(1) Transferrin		Albumin
	(3) Gamma globulin	(4)	Haemoglobin
56.	. Which hormone binds to intracel	lular recepto	ors?
	(1) Insulin		
	(2) Growth hormone		ALCOHOLDE THE SECOND
	(3) Triiodothyronine		
	(4) Thyroid stimulating hormon	e	
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57	7. Thyroxine is important in the control of	for you seem also as a work of the light of the 1889
	(1) Cellular metabolic rates	to the second se
	(2) Diabetes mellitus	
	(3) Mitochondrial respiration	A Section of the sect
	(4) Calcium uptake	Over the second
58	What are a Control of the Control of	
36	photosynthesis?	energy do plants typically harvest during
	(1) 1-2 %	(2) 5-10%
	(3) 10-20%	(4) 20-50%
59.	. Which man is known as Java man?	
	(1) Ramapithecus	(2) Australopithecus
	(3) Pithecanthropus	(4) Sinanthropus
60.		
	(1) Geographical isolation	ost important factor in speciation?
	(2) Reproductive isolation	是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个
	(3) Ethological isolation	A Marie more in terms and the second
	(4) Ecological isolation	
61.	Which of the following	
	(1) Oxidative deamination	ved in using proteins as a source of energy?
	ASSESSED ASSESSED ASSESSED.	
	Mat (t)	A to work the incast as a
	(4) Beta oxidation	The state of the s
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		The supplied of the sample of

62.	Which of the following substances are A	VOT stored in the body ?
	(1) Amino acids	(2) Glycogen
	(3) Triglyceride	(4) Cholesterol
	wat to Gate Called a second in inv	olved in converting amino acids into glucose?
63.	Which of the following processes is my	
	(1) Glucogenolysis	(2) Transamination
	(3) Gluconeogensis	(4) Lipogensis
64.	In species where young are precocial, th	ne father is more likely to be:
	(1) Monogamous	(2) Polyandrous
	(3) Polygamous	(4) Monoandrous
	(I) Phosphysmann.	Manager and Company
65.	Polycistronic gene means:	
	(1) One transcription unit encodes one	translation unit
	(2) One translation unit organised in or	
	(3) Several translation units organised	in one transcription unit
	(4) Several translation units organised	in several transcription units
cc	The hormone that promotes rapid elong	gation of internodes or petiole in deep water rice
66		ente prest mond est elles pilles et la la
	(1) Ethylene	(2) Gibberllin
	(3) Abscisic acid	(4) Cytokinin
67	. Which of the following immunoglob concentration?	oulin is present normally in plasma at highest
	(1) IgG	(2) IgM
		(4) IgD
	(3) 1gA	
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00	What is the ratio of hydrogen to oxygen	mole	cules in a carbohydrate?	, the ra
68.		(2)		
	(1) 1:1			
	(3) 2:1	(4)	3:1	
69.	Which of the following disrupts homeos	stasis	? President of the total and t	
	(1) Positive feedback		and the state of t	
	(2) Pressure filtration			
	(3) Thermoregulation			
	(4) Cellular respiration	lab h	econs deba aguist apara sar adgraf.	
	(24-Pa); androae		anti-graph (1)	
70.	Which of the following is <i>not</i> a conjugat	ited pr	otein?	
	(1) Peptone	(2)	Phosphoprotein	
	(3) Lipoprotein	(4)	Chromoprotein	
71.	When are interferons secreted in the bod	dv 2		
	(1) When antibody reacts with antigen			
	(2) When lymphocytes become active		the Southern to the second that	
	(3) When serotonin become active			
	(4) When the cells are infected with viru	us		
72.	CpG islands & sale 1:			
12.	CpG islands & codon bias are tools used	l in eu	karyotic genomics to:	
	(1) Identify ORF			
	(2) Find regulatory sequences	Indala	maoni any and the standard	
	(3) Identify gene function			
	(4) Find signal sequences			
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- 73. How so many different antibodies are produced from less than 300 genes?
 - (1) A Gene duplication
 - (2) Alternate splicing
 - (3) Formation of polyprotein
 - (4) Recombination, deletions and random assortment of DNA fragments
- 74. Two dimensional gels are used to:
 - (1) Separate DNA fragments
 - (2) Separate RNA fragments
 - (3) Separate DNA & RNA fragments
 - (4) Separate different proteins
- 75. Variable number of tandem repeats (VNTRs) in the DNA molecule are highly useful in:

(1) DNA tenenden DNA polymerase

- (1) Monoclonal antibody production
- (2) DNA fingerprinting
- (3) Recombinant DNA technology
- (4) Stem cell culture
- **76.** In bird's egg, process of cell division is confined to small disc of protoplasm lying on surface of:
 - (1) yolk at animal pole
 - (2) yolk at vegetative pole
 - (3) egg white at animal pole
 - (4) none of above

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77.	Which is not a DNA binding Domain	Consumption of a consumption of the second o
	(1) Leucine zipper	(2) Helix turn helix
	(3) Zinc finger	(4) Interon-exon-interon
78.	Which is the most specific recombinan	t library ?
	(1) Genomic	(2) Protein
	(3) C-RNA	(4) C DNA
79.	Gram negative bacterial cell wall conta	ins higher content of:
	(1) Peptidoglycan	(2) Lipid
	(3) Protein	(4) Carbohydrate
80.	Reverse transcriptase is:	The state of the sale of the s
	(1) RNA dependent RNA polymerase	
	(2) DNA dependent RNA polymerase	MANY SUPPLY BELLEVIEW TO SERVICE STATE AND AND
	(3) DNA dependent DNA polymerase	The late of the la
	(4) RNA dependent DNA polymerase	
81.	For better resolution of minute protein by staining method is advised?	pands in an SDS-PAGE, which of the following
	(1) Silver staining	(2) CBB staining
	(3) Avidin staining	(4) All of these
82.	Synthesis of peptide bond is catalysed by	
	(1) A site of ribosome	(2) P site of ribosome
	(3) 23S rRNA	(4) tRNA
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83.	Which of the following techniques w			identify and quantify	y the
	presence of a known impurity in a dru (1) NMR (2) MS	g substance (3) IR		(4) HPLC	
04	Changes matrice 1.1			traktan taitu (i.)	
84.	Chaperon proteins help in:	(2) De	otain stability	wind of the series	
	(1) Protein folding and assembly(3) Both (1) & (2)		otein stability one of these	made 31	
	(3) Both (1) & (2)	(4) 1	one of these		
85.	Which of the following post translat lumen of the endoplasmic reticulum	tional mod	lification of	proteins does not occ	ur in
	(1) A Glycosylation		eleginie u		
	(2) Formation of disulphide bonds			gaiging (4) (6)	
	(3) Folding and formation of quatern	ary structu	ire		
	(4) Ubiquitination				
	(4) Conquintination			Walder of the letters	
86.	Red Data Book is published by:	aliageth ad		completions of cars	
	(1) IUCN	(2)	UNESCO	memor anyout of	
	(3) WHO	(4)	UNEP	popertiz clarical (16)	
	The Indian Patent and Design Act en	acted in :			
87.				(4) 2005	
	(1) 1910 (2) 1911	(3) 2	002		
88	The Ames test is a mass screening ap				
	(1) Toxins			College Control (1)	
	(2) Mutagenic carcinogens		ung firmige	學的學科學學科	33 -
	(3) Lactose intolerance	a zpidane	area debases	(1) Wains is onabour	
		and wed		d) Wathka ou	
	(4) Phenylketonuria	V)((C)	300000	a almosas at an	рто
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- 89. Theory of panspermia is proposed by:
 - (1) Aristotle
 - (2) Oparin and Haldane
 - (3) Richter and Arrhenius
 - (4) None of these
- 90. A method to detect whether two mutations are located on the same gene or different genes is:
 - (1) Generalised transduction
 - (2) Complementation analysis
 - (3) Hfr mapping
 - (4) Karyotyping
- 91. Which of the following abnormality, resulted from the inheritance of an unbalanced complement of chromosomes can be diagnosed through karyotyping?
 - (1) Down's syndrome
 - (2) Turner's syndrome
 - (3) Klinefelter's syndrome
 - (4) All of these
- **92.** A coefficient of correlation is computed to be -0.95 means that :
 - (1) The relationship between two variables is weak
 - (2) The relationship between two variables is strong and positive
 - (3) The relationship between two variables is strong but negative
 - (4) Correlation coefficient cannot have these values

		19
93.	What test statistic is used for a global test of significance?	
	(1) Z test	
	(2) T test	
	(3) Chi-square test	
	(4) F test	
94.	Which of the following is the technique used for the embryo culture?	,818
	(1) Organ cultures on plasma clots	
	(2) Organ cultures on agar	
	(3) Whole embryo cultures	
	(4) All of these	
95.	The first bioinformatics database was created by :	
33.		
	(1) Richard Durbin	
	(2) Dayhoff	
	(3) Michael j. Dunn	
	(4) Pearson	
96.	Which of the following oncogenes is incorrectly paired with its function?	
90.	(1) hTERT: enzyme in DNA replication	
	(2) ras: transcription factor	
	(3) HER-2/neu: growth factor receptor	
	(4) src: receptor-associated tyrosine kinase	
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97.	Distyly is:	92. What lost sended is used for a plobal regi
	(1) Presence of two styles in a flower	
	(2) Not self-incompatible	and the second the sec
		(a) Che service feet
	(3) A form of dichogamy	
	(4) A form of herchogamy	
98.	Which of the following is not a type of	signaling molecule?
	(1) Testosterone	(2) Insulin
	(3) Adenylate Cyclase	(4) Thyroxin
99.	Epicatechin gallate (ECG) is a type of f	lavonoid, found in which of the following?
	(1) Orange	(2) Green tea
	(3) Berries	(4) Carrot
	m 1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	hidmCybrenos/(t)
100.	red balls. Find the probability that both	placement from a box containing 10 black and 8 balls are red:
	(1) 8/81	(2) 20/81
	(3) 16/81	(4) 40/81
		out of everyone grive allowing energines is made
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Total No. of Printed Pages: 21

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

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Ph.D./URS-EE-Jan-2022 SUBJECT: Life Sciences

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Time: 11/4 Hours	Max. Marks: 100	Total Questions: 100
Roll No. (in figures)	(in words)	
Name	Father's Name	
Mother's Name	Date of Examination_	
(Signature of the Candidate)		(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

- 1. All questions are compulsory.
- 2. The candidates *must return* the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A, B, C & D code will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examination in writing/through E.Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
- 5. The candidate *must not* do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers *must not* be ticked in the question booklet.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

1.	In eukaryotic DNA replication lagging	strand is formed by :
	(1) RNA fragment	
	(2) Okazaki fragment	
	(3) DNA fragment	
	(4) Nucleotide fragment	
•		
2.	A quantitative way to measure the expr	ression of a gene:
	(1) PCT	(2) RT-PCR
	(3) Real time RT-PCR	(4) Nested PCR
3.	In positional cloning the starting point	is knowledge of the :
	(1) Isolation of the gene	
	(2) DNA sequence flanking the gene	
	(3) Amino acid sequence of the gene	
	(4) DNA sequence of the gene	
4.	For culturing, plasma from the adu because:	lt chicken is preferred to mammalian plasma
	(1) It forms a clear and solid coagulun	n even after dilution
	(2) It is too opaque	
	(3) It doesn't produce solid clots	
	(4) It forms a semi solid coagulum	
5.	Range of osmolarity tolerated/accepted	l in mOsm/Kg of H ₂ O by mammalian cells is:
	(1) 150-300	(2) 280-360
	(3) 300-325	(4) 360-400

require to have

6.	According to Eagle, the grow mandatory presence of:	wth of L-strain and Hela-strain cultures
	(1) 6 amino acids	
	(2) 8 amino acids	
	(3) 10 amino acids	
	(4) 12 amino acids	
7.	What is the concentration of	CO ₂ required for culturing animal cells?
	(1) 2-5%	(2) 1-10%
	(3) 10-15%	(4) 15-20%
8.	What are the main constituen	ts of culture for animal cell growth?
	(1) Glucose and Glutamine	
	(2) Growth factors	onts add at blind Saint by
	(3) Cytokines	
	(4) All of these	
9.	Protective covering over radi	cal during seed germination is:
	(1) Suspensor	(2) Coleorhizha
	(3) Epithelium	(4) Coleoptile
0.	Little leaf disease is due to d	eficiency of:
	(1) Nitrogen	
	(2) Zinc	

(3) Molybdenum

(4) Manganese

11.	Chitin is a:	
	(1) Polysaccharide	
	(2) Protein	
	(3) Nitrogenous Polysaccharide	
	(4) Lipoprotein	Consult Disabolis on Transfer International Management
12.	Fluidity of bio-membranes can be shown	by:
	(1) Electron microscope	(2) Tissue culture
	(3) Phase contrast-microscope	(4) Fluorescence Microscope
13.	The extent bacterial group that is mos mitochondria evolved is:	et closely related to the ancestor from which
	(1) Cyanobacteria	(2) Purple photosynthetic bacteria
	(3) Archaebacteria	(4) Mehanogens
14.	Which of the following amino acids electrophoresis at a pH of 7.0?	migrates to the positive electrode on paper
	(1) glutamic acid	(2) Histidine
	(3) lysine	(4) Arginine
15.	Lincoln index is used to measure:	
	(1) Population size	
	(2) Population mortality rate	

(3) Population natality rate

16	Which of the following is not a polypep	tide?
	(1) Myoglobin	(2) α-keratin
		(4) Fibroin
	(3) Heme	
17.	When $[S] = K_M$, the velocity of an enzy	me catalyzed reaction is about :
	(1) 0.5 V _{max}	$(2) 0.4 V_{\text{max}}$
	(3) 0.2 V _{max}	$(4) 0.9 \tilde{V}_{max}$
		1 1 notymer is the :
18.	The most commonly employed cross-lin	iked polymer is the
	(1) Polyacrylamide gel	
	(2) Collagen	sont at text query fanctond MOOS July
	(3) Celluloses	
	(4) Cation exchange resin	
19.	Which of the following process offers evolution of new useful proteins?	s the greatest opportunities for accelerating the
	(1) Exon shuffling	
	(2) Interon excision	
	(3) Transposon insertion	
	(4) DNA amplification	
20	D. Peripheral part of blastoderm where ce	lls lie unseparated from yolk is termed as:
	(1) area opaca	
	(2) area pellucida	
	(3) area translucent	
	(4) zone of junction	and the second s
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21.	Aroma in rice is due to:	Control of the Contro
	(1) Acetyl choline	
	(2) 2-benzył pyrroline	
	(3) 2-ethyl pyrroline	
	(4) 2-acetyl 1- pyrroline	Para bashali Matika
22.	Primordial soup is a set of hypothetica by	conditions on ancient earth first proposed
	(1) Dmitri Ivanovsky	
	(2) Alexander Oparin	
	(3) Dmitry Anuchin	
	(4) Nikolay Shatsky	
23.	Which of the following is archaebacteria	And the state of t
	(1) Methanogens	2) Mycoplasma
	(3) Green sulphur bacteria	4) Mycobacterium
24.	. The brain's ability to change in response to	experience or damage is called:
	(1) lateralization	2) lesioning
	(3) neuroplasticity	4) functionality
25.	. Which of the following favours endospore	formation:
	(1) High concentration of nitrogenous nu	rients
	(2) Low concentration of nitrogenous nut	rients
	(3) Low concentration of oxygen	
	(4) None of the above	

	(1) Cystic fibrosis	
	(2) Growth defects	
	(3) Kidney disorder	
	(4) Multiple sclerosis	
27.	7. A technique by which protein of inter	est can be purified in a single step:
	(1) Gel filtration chromatography	
	(2) Ion exchange chromatography	
	(3) Affinity chromatography	
	(4) Hydrophobic interaction chromato	ography
28.		within the liver cells and then attacks RBCs RBCs is associated with the release of a toxic
	(1) Hirudin	(2) Heptoin
	(3) Heparin	(4) Heamozoin
29.	Organic molecules found in minute q metabolism are called:	uantities in food but that are essential to normal
	(1) Coenzymes	(2) Vitamins
	(3) Pro vitamins	(4) Cofactors
30.	In the human skeletal muscle and brain in aerobic respiration is time respiration.	n cells, the energy yield per molecule of glucose nes higher than the energy yield in anaerobic
	(1) 2 (2) 19	(3) 16 (4) 18

(3) 16

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(4) 18

26. Recombinant DNase is used for the treatment of:

31.	Who proposed mutation theory:	
	(1) J. B. Lamarck	(2) Charles Darwin
	(3) Hugo de Vries	(4) Mendal
32.	T4 polynucleotide kinase is used for :	a resigners and respect to algorithms and 188
	(1) Labelling of 3 ends of DNA	wear to oxygen adjoration to gain (1)
	(2) Labelling 5 ends of DNA	
	(3) Creating blunt ends of DNA	(4) None of the above
	(4) Dephosphorylation of DNA	
		and philody A Bi
33.	Carbon dating method was developed by	/:
	(1) Willard Libby	(2) Bolt Wood
7	(3) Simpson	(4) Mayer
34.	The discovery of Dinosaurian bones for Indicating that the Dinosaurs have survive	from the Intertrappean beds of a jar, Gujarat ved in India even during the:
	(1) Permian	(2) Paleocene
	(3) Miocene	(4) Pleistocene.
35.	The major phenomenon responsible for	micro evolution and mega evolution:
	(1) Genetic drift	(2) Vaccinia virus
	(2) Adaptative radiation	Superior a type of the
	(3) Natural selection	
	(4) None of these	

36.	BAC which can be used for cloning large fragments, is derived from:		
	(1) ColE plasmid) F plasmid
	(3) 2μ plasmid	(4) Mu phage
37.	An example of converg	gent evolution is:	
	(1) Wing of Hawkmot		S
	(2) Teeth of domestic		
	(3) Wings of Geospiza	magnirostris, wings	of Geospiza fortis
	(4) None of the above		AV 330 at he mild yo
38.	A reporter gene :		
	(1) Acts as an activato	r	
	(2) Allows gene expre	ssion to be readily me	easured
	(3) Enhances mRNA s		
	(4) Interacts with DNA	A polymerase	
39.	The last common ances	stor of humans is:	
	(1) Pan troglodytes	(2)	Homo neanderthalensis
	(3) Lemuroidea	(4)	Dromaeosaurus
40.	Which of the following	viruses replicate in c	cytoplasm ?
	(1) SV40	(2)	Adenovirus
	(3) Vaccinia virus	(4)	Herpes virus
41.	Crypsis is a type of:		
	(1) Offensive behavior	(2)	Courtship behavior
	(3) Defensive behavior	(4)	Forging behavior
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42.	Saccharomyces cerivisiae is used for the	production of all of these except:
	(1) Bread	(2) Beer
	(3) Brandy	(4) Cheese
43.	Which method of vinegar production r microbes prior to use?	equires that the product be filtered to remove
	(1) Trickle method	(2) Bubble method
	(3) Orleans method	(4) Open-Vat method
44.	Which of the following is a secondary m	netabolite ?
	(1) Tetracycline	(2) Citric acid
	(3) Ethanol	(4) None of these
45.	The strain of fungi used for the large sca	ale production of citric acid is:
	(1) Penicillium chrysogenum	
	(2) Aspergillus. niger	
	(3) Streptomyces Aurecus	
	(4) Saccharomyces sps	arriva armosod/saryaodynest godyf (G)
46.	Juice clarification extraction is facilitate	ed by using:
	(1) Amylase	(2) Pectinase
	(3) Inulinase	(4) Lactase
47.	Whey is the by-product in the manufact	ure of:
	(1) Skimmed milk	(2) Butter
	(3) Cheese	(4) Yogurt

)	
48.	The method of preventing or reducing pathogens in food products by combining many methods like high temperature during processing, low temperature during storage, increasing the acidity etc is called:
	(1) Mixed preservation approach
	(2) High pressure food preservation
	(3) Hurdle technology
	(4) Stumbling technology
49.	Cancer of β lymphocytes is called:
	(1) Myeloma (2) Sarcoma
	(3) Melanoma (4) Carcinoma
50.	The technique of DNA finger printing was given by ?
00.	(1) Alec Jeffary (2) Paul Terasaky
	(3) James Clarke (4) Franklin
51.	When are interferons secreted in the body?
	(1) When antibody reacts with antigen
	(2) When lymphocytes become active
	(3) When serotonin become active
	(4) When the cells are infected with virus
52.	CpG islands & codon bias are tools used in eukaryotic genomics to:
	(1) Identify ORF

(2) Find regulatory sequences

(3) Identify gene function

(4) Find signal sequences

- 53. How so many different antibodies are produced from less than 300 genes?
 - (1) A Gene duplication
 - (2) Alternate splicing
 - (3) Formation of polyprotein
 - (4) Recombination, deletions and random assortment of DNA fragments
- 54. Two dimensional gels are used to:
 - (1) Separate DNA fragments
 - (2) Separate RNA fragments
 - (3) Separate DNA & RNA fragments
 - (4) Separate different proteins
- Variable number of tandem repeats (VNTRs) in the DNA molecule are highly useful 55. in:
 - (1) Monoclonal antibody production
 - (2) DNA fingerprinting
 - (3) Recombinant DNA technology
 - (4) Stem cell culture
- In bird's egg, process of cell division is confined to small disc of protoplasm lying on surface of:
 - (1) yolk at animal pole
 - (2) yolk at vegetative pole
 - (3) egg white at animal pole
 - (4) none of above

	Descrip?	
57.	Which is not a DNA binding Domain?	(2) Helix turn helix
	(1) Leucine zipper	
	(3) Zinc finger	(4) Interon-exon-interon
		library ?
58.	Which is the most specific recombinant	Holary:
	(1) Genomic	(2) Protein
	(3) C-RNA	(4) C DNA
	그렇게 되었다면 얼마를 살아 있는데 그 얼마나 되었다.	(: 1 - antent of:
59.	Gram negative bacterial cell wall contain	ns higher content of
	(1) Peptidoglycan	(2) Lipid
	(3) Protein	(4) Carbohydrate
	(5) 1100000	
60.	Reverse transcriptase is:	
	(1) RNA dependent RNA polymerase	
	(2) DNA dependent RNA polymerase	notherborg wanderes unper specific (1)
	(3) DNA dependent DNA polymerase	
	(4) RNA dependent DNA polymerase	
61	Which of the following abnormality, 1	resulted from the inheritance of an unbalanced
61.	complement of chromosomes can be di	agnosed through karyotyping?
	(1) Down's syndrome	
	(2) Turner's syndrome	
	(3) Klinefelter's syndrome	
	(4) All of these	

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- **62.** A coefficient of correlation is computed to be -0.95 means that :
 - (1) The relationship between two variables is weak
 - (2) The relationship between two variables is strong and positive
 - (3) The relationship between two variables is strong but negative
 - (4) Correlation coefficient cannot have these values
- **63.** What test statistic is used for a global test of significance?
 - (1) Z test
 - (2) T test
 - (3) Chi-square test
 - (4) F test
- **64.** Which of the following is the technique used for the embryo culture?
 - (1) Organ cultures on plasma clots
 - (2) Organ cultures on agar
 - (3) Whole embryo cultures
 - (4) All of these
- **65.** The first bioinformatics database was created by :
 - (1) Richard Durbin
 - (2) Dayhoff
 - (3) Michael j. Dunn
 - (4) Pearson

66.	Which of the following oncogenes is	s incorrectly paired with its function?
	(1) hTERT: enzyme in DNA replica	ation
	(2) ras: transcription factor	
	(3) HER-2/neu: growth factor recep	ptor
	(4) src: receptor-associated tyrosine	kinase
67.	Distyly is:	
	(1) Presence of two styles in a flow	er
	(2) Not self-incompatible	
	(3) A form of dichogamy	tear amount of the
	(4) A form of herchogamy	
68.	Which of the following is <i>not</i> a type	of signaling molecule?
	(1) Testosterone	(2) Insulin
	(3) Adenylate Cyclase	(4) Thyroxin
69.	Epicatechin gallate (ECG) is a type	of flavonoid, found in which of the following?
	(1) Orange	(2) Green tea
	(3) Berries	(4) Carrot
70.	Two balls are drawn at random with red balls. Find the probability that be	replacement from a box containing 10 black and 8 oth balls are red:
	(1) 8/81	(2) 20/81
	(3) 16/81	(4) 40/81
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71.	For better resolution of minute protein bestaining method is advised?	bands	in an SDS-PAGE, which of the following
	(1) Silver staining	(2)	CBB staining
	(3) Avidin staining	(4)	All of these
72.	Synthesis of peptide bond is catalysed b	y:	
	(1) A site of ribosome	(2)	P site of ribosome
	(3) 23S rRNA	(4) 1	tRNA
73.	Which of the following techniques wor presence of a known impurity in a drug		most useful to identify and quantify the nce?
	(1) NMR	(2)	MS
	(3) IR	(4)	HPLC
74	Changran arataing halp in :		
74.	Chaperon proteins help in:	(2)	Protein stability
	(1) Protein folding and assembly		None of these
	(3) Both (1) & (2)	(4)	None of these
75.	Which of the following post translation lumen of the endoplasmic reticulum	nal mo	odification of proteins does not occur in
	(1) A Glycosylation		sed redbed to detect whether has
	(2) Formation of disulphide bonds		
	(3) Folding and formation of quaternary	struc	ture
	(4) Ubiquitination		
76.	Red Data Book is published by:		
	(1) IUCN	(2)	UNESCO
	(3) WHO	(4)	UNEP
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77.	The Indian Patent and Design Act enacted	ed in:
	(1) 1910	(2) 1911
	(3) 2002	(4) 2005
78.	The Ames test is a mass screening appro	ach used for the detection of:
	(1) Toxins	
	(2) Mutagenic carcinogens	
	(3) Lactose intolerance	
	(4) Phenylketonuria	
79.	Theory of panspermia is proposed by:	
	(1) Aristotle	
	(2) Oparin and Haldane	
	(3) Richter and Arrhenius	
	(4) None of these	
80.	A method to detect whether two mutat genes is:	ions are located on the same gene or different
	(1) Generalised transduction	
	(2) Complementation analysis	
	(3) Hfr mapping	
	(4) Karyotyping	

81.	Mycoplasma are not inhibited by penicillin because they:		
	(1) Produce penicillinase		
	(2) Are gram positive		
	(3) Are gram negative		
	(4) Don't have a cell wall		
82.	. The following two organs are example of sec	ondary lymphoid organs :	
	(1) Spleen and thymus		
	(2) Lymph nodes and thymus		
	(3) Spleen and GALT		
	(4) Bone marrow and MALT		
83.	. Which of the following does not participate complexes?	ate in the formation of antigen-antibody	
	(1) Hydrophobic bonds		
	(2) Covalent bonds		
	(3) Electrostatic interactions		
	(4) Van der Waals forces		
84.	Cells that release histamine and other vasc	pactive substances in response to allergens	
	(1) Neutrophils (2)	Macrophages	
	(3) NK cells	Mast cells	
85.	The most abundant protein in human blood		
	(1) Transferrin (2)) Albumin	
	(3) Gamma globulin (4) Haemoglobin	
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86.	Which hormone binds to intracellular r	eceptors?	
	(1) Insulin		
	(2) Growth hormone		
	(3) Triiodothyronine		
	(4) Thyroid stimulating hormone		
87.	Thyroxine is important in the control of	of:	
	(1) Cellular metabolic rates		
	(2) Diabetes mellitus		
	(3) Mitochondrial respiration	The said and an area of the	
	(4) Calcium uptake		
88	. What percent of the incident sol photosynthesis?	ar energy do plants typically harvest	during
	(1) 1-2 %	(2) 5-10%	
	(3) 10-20%	(4) 20-50%	
89	Which man is known as Java man?		
	(1) Ramapithecus	(2) Australopithecus	
	(3) Pithecanthropus	(4) Sinanthropus	
9	O. Which one among the following is the	ne most important factor in speciation?	
•	(1) Geographical isolation		
	(2) Reproductive isolation		
	(3) Ethological isolation	(Single Control of the Control of th	
	(4) Ecological isolation		

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91.	Which of the following processes is inve	olved in using proteins as a source of energy?
	(1) Oxidative deamination	(3) Ketogenesis
	(2) Glycolysis	(4) Beta oxidation
92.	Which of the following substances are M	NOT stored in the body ?
	(1) Amino acids	(2) Glycogen
	(3) Triglyceride	(4) Cholesterol
93.	Which of the following processes is invo	olved in converting amino acids into glucose?
	(1) Glucogenolysis	(2) Transamination
	(3) Gluconeogensis	(4) Lipogensis
94.	In species where young are precocial, th	e father is more likely to be:
	(1) Monogamous	(2) Polyandrous
	(3) Polygamous	(4) Monoandrous
95.	Polycistronic gene means:	(1) Peptone
	(1) One transcription unit encodes one t	ranslation unit
	(2) One translation unit organised in one	e transcription unit
	(3) Several translation units organised in	n one transcription unit
	(4) Several translation units organised in	n several transcription units
96.	The hormone that promotes rapid elongation plant is	ation of internodes or petiole in deep water rice
	(1) Ethylene	(2) Gibberllin
	(3) Abscisic acid	(4) Cytokinin
-		

97.	Which of the following immunoglol concentration?	bulin is present normally in plasma at inglies
	(1) IgG	(2) IgM
	(3) 1gA	(4) IgD
98.	What is the ratio of hydrogen to oxyge	en molecules in a carbohydrate ?
	(1) 1:1	(2) 1:2
	(3) 2:1	(4) 3:1
99.	Which of the following disrupts home (1) Positive feedback (2) Pressure filtration (3) Thermoregulation (4) Cellular respiration	ostasis ?
100.	Which of the following is not a conju	gated protein?
	(1) Peptone	(2) Phosphoprotein
	(3) Lipoprotein	(4) Chromoprotein
	utsectiption unit	n sno m bosons in their nobe (also still) to

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82	3	2 -	3	3
83	4	1 -	4	1
84	4	2 -	3	4
85	2	3 -	4	4
86	2	2 -	1	3
87	4	1 -		1
88	3	2 -	2	1
89	2	1 -	4	3
90	3	3 -	2	2
91	3	3 -	4	
92	4	3 -		1
93	2		3	1
		2 -	4	3
94	1	1 /	4	3
95	2	4 /	2 2	3
96		3 -		1
97	3	1/	4	1
98	3	1/	3	3
99	1	1/	2	1
100	1	1'	3	1

Clares with wing the

Oller

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