



Gujarat Biotechnology Research Centre
Scientist - B (Group-1) Animal Biotechnology Mains

Question Paper

Exam Date: 30 April 2023

Time: 10:30 am to 12:30 pm

1	Vero cell line was obtained from the kidney cells of		D		
	A	Calf		B	Swine
	C	Chinese hamster		D	African green monkey
2	Optimum pH required for the growth of mammalian cells is		D		
	A	6.5-7.0		B	8.1-8.9
	C	5.3-7.0		D	7.2-7.4
3	The production of whole animals from somatic cells of an animal is called?		A		
	A	Animal cloning		B	Gene cloning
	C	Cell cloning		D	All of the above
4	The first animal to be successfully cloned was		C		
	A	Rabbit		B	Gibbon
	C	Sheep		D	Monkey
5	Name the organism on which first cell line was observed?		B		
	A	Sheep		B	Mouse
	C	<i>E. coli</i>		D	Drosophila
6	Name the non-membrane bound organelle found only in animal cell		A		
	A	Centrosome		B	Sphaerosome
	C	Glyoxisome			Peroxisome
7	Component of plant cell absent in animal cell is		B		
	A	Cell membrane		B	Cell wall
	C	Cytoplasm		D	Nucleus
8	A process by which certain individuals in a population are preferred over others for producing next generation, is called		B		
	A	Pedigree testing		B	Selection
	C	Inbreeding		D	Progeny testing
9	Regions within an eukaryotic primary transcript that are removed during processing of m RNA		A		
	A	intron		B	okazaki fragments
	C	exon		D	none of above
10	Most common monomer of carbohydrates		B		
	A	Glucose		B	fructose
	C	sucrose		D	maltose
11	Chegu breed of goat produce?		B		
	A	Angora		B	Pashmina
	C	Mohair		D	None
12	Identify the sulphur containing amino acid		B		
	A	Proline		B	Methionine
	C	Aspartic acid		D	tryptophan
13	Table sugar is		A		
	A	sucrose		B	Glucose



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	C fructose	D Lactose	
14	Starch is a polymer of		A
	A glucose	B Fructose	
	C sucrose	D maltose	
15	Which one of the following is single stranded RNA		C
	A TMV	B T2 bacteriophage	
	C Pox virus	D Φ x174	
16	Which of the following enzyme is used in making detergent		C
	A Amylase	B Cellulase	
	C Protease	D Peptidase	
17	The enzyme which combines with non protein part to form a functional enzyme is known as		C
	A Coenzyme	B Holoenzyme	
	C Apoenzyme	D Prosthetic group	
18	How many phosphodiester bonds are there in ATP		D
	A 3	B 2	
	C 1	D 0	
19	Centromere is required for		D
	A Transcription	B Crossing over	
	C Cytoplasmic cleavage	D Movement of chromosomes towards poles	
20	The milk protein, Casein is a		A
	A Phosphoprotein	B Chromoprotein	
	C Nucleoprotein	D Glycoprotein	
21	What is the primary structure of fibroin, principal protein of silkworm fibres made of		C
	A Aspartate	B Keratin	
	C Glycine	D Tryptophan	
22	Synthesis of RNA and proteins takes place in		D
	A M phase	B S phase	
	C G ₁ phase	D G ₁ phase and G ₂ phase	
23	Spindle fibres are made up of		A
	A Tubulin	B Humulin	
	C Intermediate filaments	D Flagellin	
24	What is the Protein content of cow's milk		C
	A 2.5%	B 4.5%	
	C 3.5%	D 5.5%	
25	What happens when eggs are properly cooked		C
	A Biotin is destroyed but avidin remains unaffected	B Both avidin and biotin are inactivated	
	C Avidin is inactivated but biotin	D Both avidin and biotin remain unaffected	



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		remains unaffected			
26	Chromosomes are separated during				A
	A	Prophase	B	Metaphase	
	C	Anaphase	D	Telophase	
27	What is the total number of ATPs formed per mole of glucose during anaerobic glycolysis				A
	A	2	B	6	
	C	1	D	8	
28	Colchicine arrests which of the following stage of cell division				B
	A	Prophase	B	Metaphase	
	C	Anaphase	D	Telophase	
29	Which among the following is regarded as a dietary essential vitamin in ruminants and pre-ruminants ?				B
	A	Biotin	B	Ascorbic acid	
	C	Riboflavin	D	Choline	
30	Bacteria protect themselves from viruses by fragmenting viral DNA with				B
	A	Ligase	B	Endonuclease	
	C	Exonuclease	D	Gyrase	
31	Molasses are excellent source of minerals except				A
	A	Phosphorus	B	Magnesium	
	C	Calcium	D	Sodium	
32	ELISA is				D
	A	Using radiolabelled second antibody	B	Usage of RBCs	
	C	Using complement-mediated cell lysis	D	Addition of substrate that is converted into a colored end product	
33	The DNA fragments have sticky ends due to				B
	A	Endonuclease	B	Unpaired bases	
	C	Calcium ions	D	Free methylation	
34	How many days are the average gestation period for a dairy cow?				C
	A	215	B	260	
	C	280	D	300 days	
35	What would you measure to estimate the sperm producing capability of a bull?				A
	A	Scrotal circumference	B	Penis length	
	C	Body weight and age	D	Testicular firmness	
36	Cud chewing animals are called				A
	A	ruminants	B	canibals	
	C	frugivores	D	sanguivores	
37	Which of the following vitamins is water soluble as well as antioxidants				D



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	A	Vitamin B-1	B	Vitamin A	
	C	Vitamin D	D	Vitamin C	
38	Peptic cells secrete				D
	A	HCL	B	Cholecystokinin	
	C	gastrin	D	pepsin	
39	Fat soluble vitamin is				A
	A	A	B	B ₆	
	C	C	D	B ₁₂	
40	Among mammals, a significant role in the digestion of milk is played by				A
	A	Rennin	B	Invertase	
	C	Amylase	D	Intestinal bacteria	
41	Secretion of pancreatic juice is stimulated by				B
	A	Gastrin	B	Secretin	
	C	Enterogastrone	D	Enterokinase	
42	FAD is a coenzyme derived from				B
	A	thymine	B	riboflavin	
	C	Vitamin B ₁₂	D	niacin	
43	The sugar present in milk is				D
	A	Fructose	B	Sucrose	
	C	Glucose	D	Lactose	
44	How much percent of CO ₂ is expired during breathing				B
	A	7%	B	32%	
	C	25%	D	20%	
45	Lungs are covered by				A
	A	Pleural membrane	B	peritoneum	
	C	pericardium	D	None of these	
46	Mark the odd one				D
	A	monocyte	B	lymphocyte	
	C	neutrophil	D	erythrocyte	
47	In adult man, normal blood pressure is				B
	A	100/80 mm Hg	B	120/80 mm Hg	
	C	100/120 mm Hg	D	80/120 mm Hg	
48	Yellow bone marrow is found especially in the medullary cavity of				C
	A	Sort bones	B	Spongy bones	
	C	Long bones	D	All of these	
49	Lymphoid tissue is found in				D
	A	Thymus	B	Tonsils	
	C	Lymph nodes	D	All of these	
50	Pacemaker is				B
	A	AV- node	B	SA- node	



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	C	Bundle of His	D	Ventricular muscles	
51	Tissue plasmin activator				B
	A	Helps in wound healing	B	Dissolves clot in blood vessels of heart	
	C	Allergy response	D	None of these	
52	Graveyard of RBCs is				A
	A	Spleen	B	Liver	
	C	Kidney	D	Thymus	
53	The QRS complex in a standard ECG represents				C
	A	Repolarization of auricles	B	Depolarization of auricles	
	C	Depolarization of ventricles	D	Repolarization of ventricles	
54	Which of the following is associated with decrease in cardiac output				C
	A	Adrenal medullary hormones	B	Sympathetic nerves	
	C	Parasympathetic neural signals	D	Pneumotaxic centre	
55	Which of the following conditions in urine are indicative of diabetes mellitus				C
	A	Ketonuria and Uremia	B	Renal calculi and Uremia	
	C	Glycosuria and Ketonuria	D	Hyperglycaemia and Renal calculi	
56	Which hormone level causes release of ovum from the graffian follicle				D
	A	Low FSH	B	High progesterone	
	C	Low LH	D	High estrogen	
57	Select the correct statement from the following				C
	A	Glucagon is associated with hypoglycaemia	B	Insulin acts on pancreatic cells and adipocytes	
	C	Glucocorticoids stimulate gluconeogenesis	D	Insulin is associated with hyperglycaemia	
58	Inner walls of the large blood vessels are made of				A
	A	Squamous epithelium	B	Stratified epithelium	
	C	Columnar epithelium	D	Cuboidal epithelium	
59	Adipose tissue belongs to				C
	A	neural	B	epithelial	
	C	connective	D	muscular	
60	Which one is not a connective tissue				A
	A	blood	B	bone	
	C	muscles	D	cartilage	
61	Which of the following substances, if introduced into the blood stream,would cause coagulation of blood at the site of introduction				D
	A	heparin	B	fibrinogen	
	C	prothrombin	D	thromboplastin	
62	Four healthy people in their early twenties got involved in injuries resulting in damage and death of a few cells. Which of the below cells are least likely to be replaced by new cells				B



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	A	Malpighian layer of skin	B	neurons	
	C	Liver cells	D	osteocytes	
63	Mark the odd one				D
	A	monocytes	B	lymphocytes	
	C	neutrophils	D	erythrocytes	
64	Nerve cells do not divide because they do not have				C
	A	nucleus	B	Golgi body	
	C	centrosome	D	mitochondria	
65	Which of the following is phagocytic				A
	A	monocyte	B	RBC	
	C	Eosinophil	D	basophil	
66	White blood cells associated with release of histamine and heparin				B
	A	neutrophils	B	basophils	
	C	monocytes	D	eosinophils	
67	Connection between axon and dendrite is				B
	A	synapsis	B	synapse	
	C	desmosome	D	Tight junction	
68	Name the type of tissue which forms glands				B
	A	muscular	B	epithelial	
	C	squamous	D	cuboidal	
69	Skeletal muscles are controlled by				C
	A	Sympathetic nerves	B	Para-sympathetic nerves	
	C	Somatic nerves	D	Autonomic nerves	
70	Tendons and ligaments are specialised types of				D
	A	Areolar tissue	B	Adipose tissue	
	C	Fibrous C.T.	D	Epithelial tissue	
71	Fibroblasts, macrophages and mast cells are seen in				B
	A	Epithelial tissue	B	Connective tissue	
	C	Skeletal muscle tissue	D	Nervous tissue	
72	Site of protein synthesis				A
	A	Ribosome	B	SER	
	C	Golgi body	D	lysosome	
73	Powerhouse of a cell is				B
	A	Golgi bodies	B	mitochondria	
	C	Ribosomes	D	Endoplasmic reticulum	
74	From the following statements, select the statement that is true				D
	A	All cells have cell wall	B	Animal cells contain microtubules but plant cells do not	
	C	Golgi apparatus is found only in animal cells	D	Chloroplasts are found in plant cells but not in prokaryotic or animal cells	



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75	Among the following which is not an important signal for E.coli genes				B
	A	Terminator	B	Inducer	
	C	Promoter	D	Ribosome binding site	
76	Choose the correct match				C
	A	Rough ER: synthesis of glycogen	B	Smooth ER: oxidation of phospholipids	
	C	Smooth ER: synthesis of lipids	D	Rough ER: oxidation of fatty acids	
77	Which of the following is not a feature of plasmids				A
	A	Single stranded	B	Independent replication	
	C	Circular structure	D	Transferable	
78	A complex of ribosomes attached to single strand of RNA is known as				B
	A	Okazaki fragment	B	Polysome	
	C	Polymer	D	Polypeptide	
79	Which one of the following cell organelles is enclosed by a single membrane				D
	A	Nuclei	B	Mitochondria	
	C	Chloroplast	D	Lysosomes	
80	Golgi complex participates in				C
	A	Fatty acid breakdown	B	Respiration in bacteria	
	C	Formation of secretory vesicles	D	Activation of amino acids	
81	Many elements are found in living organisms either free or in the form of compounds. One of the following is not found in living organisms.				A
	A	Silicon	B	Magnesium	
	C	Iron	D	Sodium	
82	Amino acid with both positive and negative charges simultaneously in the same molecule				B
	A	Neutral form	B	Zwitterionic form	
	C	Negatively charged form	D	Positively charged form	
83	When we homogenise any tissue in an acid the acid soluble pool represents				A
	A	Cytoplasm	B	Cell membrane	
	C	Nucleus	D	Mitochondria	
84	An additional function of some proteins				B
	A	Pigments conferring color to skin	B	Hormones	
	C	Antibiotics	D	Pigments making colors of flowers	
85	Name the elements which occur in nucleic acid macromolecule				D
	A	C, H, O, N, S	B	C, O, N, S	
	C	C, O, P, S	D	C, H, O, N, P	
86	Crossing over may result in				C
	A	Addition of genetic material	B	Deletion of genetic material	
	C	Exchange of genetic material	D	All of these	
87	The stage between two meiotic divisions is called				C
	A	Interphase	B	Cytokinesis	



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	C	Interkinesis	D	Karyokinesis	
88	Which of the following statements is incorrect about G ₀ phase				A
	A	Mitosis occurs after G ₀ phase	B	Biocatalysts can be used to exit G ₀ phase	
	C	Cell volume goes on increasing during G ₀ phase	D	Cell metabolism occurs continuously in G ₀ phase	
89	Which of the following events are not characteristic features of telophase i)Chromosome material condenses to form compact mitotic chromosomes ii) Nucleolus, Golgi complex and ER reform iii)Nuclear envelope assembles around the chromosome clusters iv) Centromeres split and chromatids separate v) Chromosomes cluster at opposite spindle poles and their identity as discrete elements is lost				B
	A	i) ii) iv) only	B	i) iv) only	
	C	ii) iii) only	D	iii) iv) v) only	
90	Genetically engineered bacteria have been used in commercial production of				C
	A	Thyroxine	B	Testosterone	
	C	Human insulin	D	Melatonin	
91	Transgenic crops developed to tolerate herbicides are				D
	A	Tomato and rice	B	Rice and wheat	
	C	Maize and sugarcane	D	Tomato and Tobacco	
92	Number of known enzymes is				B
	A	1200	B	2200	
	C	About 5000	D	Around 500	
93	Antigens are present				C
	A	Inside nucleus	B	Inside cytoplasm	
	C	On cell surface	D	Inside lysosomes	
94	The first transgenic crop was				C
	A	Pea	B	Flax	
	C	Tobacco	D	Cotton	
95	The first bioherbicide was obtained from				C
	A	Penicillium	B	Phytophthora palmivora	
	C	Phytophthora infestons	D	Bacillus thuringiensis	
96	Restriction enzymes were discovered by				A
	A	Smith and Nathans	B	Alexander Fleming	
	C	Berg	D	None	
97	Klenow fragment is derived from				B
	A	DNA Ligase	B	DNA Pol-I	
	C	DNA Pol-II	D	Reverse Transcriptase	
98	The sequence that controls the copy number of the linked DNA in the vector, is termed				D
	A	Selectable marker	B	Recognition site	



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	C	Palindromic sequence	D	Ori site	
99	Plasmids present in the bacterial cells are				D
	A	Linear double helical RNA molecules	B	Linear double helical DNA molecules	
	C	Circular double helical RNA molecules	D	Circular double helical DNA molecules	
100	For transformation, microparticles coated with DNA to be bombarded with gene gun are made up of				A
	A	Gold or Tungsten	B	Silicon or Platinum	
	C	Platinum or Zinc	D	Silver or Platinum	
101	Metformin is mainly used for which disease?				A
	A	Type 2 diabetes	B	Gall bladder cancer	
	C	Headache	D	Parkinson disease	
102	Coagulation factors are present in following fluid except				A
	A	Serum	B	Synovial fluid	
	C	Plasma	D	Lymph	
103	Placenta is found in all mammals expect				A
	A	Platypus	B	Mongoose	
	C	Rat	D	Chimpanzee	
104	A phenomenon in which parent specific gene is expressed is termed as				B
	A	Epistasis	B	Genome imprinting	
	C	Codominance	D	Pleiotropy	
105	Which of the following doesn't bind to cell membrane receptor?				D
	A	Epidermal growth factor	B	Acetylcholine	
	C	Fibroblast growth factor	D	Estrogen	
106	Which of the following show the DNA content of female's gametes during her childhood?				D
	A	23 chromosomes, 46 chromatids	B	46 chromosomes, 46 chromatids	
	C	23 chromosomes, 23 chromatids	D	46 chromosomes, 92 chromatids	
107	In an enzyme substrate reaction when a substrate compete for the active site and increase the Km of reaction is termed as				A
	A	Competitive Inhibitors	B	Allosteric Inhibitor	
	C	Non-Competitive Inhibitors	D	Both A and B	
108	Hybridoma technology is used to produce which of the following antibody				D
	A	Nanobody	B	Bispecific antibody	
	C	Polyclonal antibody	D	Monoclonal antibody	
109	Which of following technology is mostly used for sex selection in Animal Biotechnology				A
	A	Flow cytometry	B	CRISPR	
	C	Microscopy	D	Microfluidics	



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110	Which of the following statement describe reverse genetics?		A
	A	An experimental molecular genetics technique that enables researchers to elucidate gene function by examining changes to phenotypes	
111	C	An experimental molecular genetics technique that enables researchers to elucidate phenotype function by changing gene function	C
	D	An experimental molecular genetics technique that elucidates mitochondrial inheritance.	
112	Which of the following method is used to determine the absolute quantitation of DNA?		C
	A	Gel electrophoresis	
113	C	Spectrophotometry	C
	D	LC-MS	
114	The amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals is termed as		C
	A	MIC	
115	C	LD ₅₀	C
	D	Both B and C	
116	Mitochondrial DNA are maternally inherited and has various properties, including the lack of recombination, high mutation rates, and the presence of multiple copies. What is the importance to study mitochondrial DNA?		C
	A	To study the abundance of great phenotypic and genetic variation now found in domesticated animals	
117	C	To provide compelling evidence when and which location domestication started	B
	D	To facilitate humans to select animals matching particular needs and purposes	
118	Selection or by introgression in animal breeding result in one of the following?		B
	A	Decrease of the frequency of the favorable allele	
119	C	Increase of the frequency of the lethal allele	B
	D	Decrease of the frequency of the lethal allele	
120	Transfer of nuclei from the inner cell mass cells of a blastocyst into enucleated zygotes leads to developmental arrest. What could be the possible explanation?		B
	A	Rapid loss of pluripotency in developing embryonic cells.	
121	C	Cloning of mammals by nuclear transfer is biologically impossible	A
	D	Experimental error was made hence it cannot be concluded it lead to developmental arrest.	
122	The gene responsible for sex determination is one of the following		A



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	A	SRY	B	Protamine	
	C	RAS	D	P53	
117	Which process involve in the identification of blood group?				A
	A	Agglutination	B	Precipitation	
	C	Neutralization	D	Opsonization	
118	A programmed cell death occurring upon cell detachment from the extracellular matrix				C
	A	Apoptosis	B	Necrosis	
	C	Anoikis	D	Karyokinesis	
119	What enables the coordinated co-expression of two genes with the same vector?				D
	A	TATA sequence	B	Kozak sequence	
	C	Promoter sequence	D	IRES sequence	
120	Which is site where the biosynthesis of cholesterol takes place?				C
	A	Golgi bodies	B	Lysosome	
	C	Endoplasmic reticulum	D	Multivesicular bodies	
121	3' to 5' exonuclease is found in which DNA polymerase				A
	A	DNA polymerase I	B	DNA polymerase III	
	C	DNA polymerase II	D	DNA polymerase IV	
122	What are nude mice?				C
	A	Transgenic mice	B	Mice without liver	
	C	Mice without thymus	D	Mice without spleen	
123	Systemic lupus erythematosus (SLE) is				C
	A	Reproductive disorder	B	Hormonal disorder	
	C	Autoimmune disorder	D	Neuronal disorder	
124	Which type of RNA is seen in Agarose Gel				A
	A	28S & 18S	B	28S & 5S	
	C	28S & 5.8S	D	18S & 5.8S	
125	Which of the following define single nucleotide polymorphism?				C
	A	Single-nucleotide polymorphism is a germline substitution of a single nucleotide at a specific position in the genome and is present in less than 1% of population	B	Single-nucleotide polymorphism is a germline substitution of a single nucleotide at a specific position in the genome and is not present in a population	
	C	Single-nucleotide polymorphism is a germline substitution of a single nucleotide at a specific position in the genome and is present in 1% or more population.	D	Both A & B	
126	Autophagy was discovered in which organism?				A



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	A	Saccharomyces cerevisiae	B	Mammals	
	C	Bacteria	D	CHO cell line	
127	The resolution of conventional wide field fluorescence microscopy is				B
	A	100nm	B	200nm	
	C	50nm	D	150nm	
128	The vesicles which are in the range of 30-100nm is termed as				A
	A	Exosomes	B	Apoptotic bodies	
	C	Endosomes	D	Microvesicles	
129	Which cell doesn't possess nucleus?				D
	A	Macrophages	B	WBC	
	C	Lymphocytes	D	RBC	
130	Platelets are formed from which type of cells?				B
	A	Macrophages	B	Megakaryocytes	
	C	Neutrophils	D	Endothelial cells	
131	Cell fusion occur during differentiation in all cells except				A
	A	hepatocytes	B	trophoblasts	
	C	myoblasts	D	osteoclasts	
132	Small nuclear ribonucleoproteins are involved in which of the following process				D
	A	Replication	B	Translation	
	C	Transcription	D	Splicing	
133	Which one of the following is the start codon?				A
	A	ATG	B	TAG	
	C	TAA	D	TGG	
134	The change in phenotype of a cell due to a new genetic material is termed				A
	A	cell transformation	B	signal transduction	
	C	cell adhesion	D	Nuclear transformation	
135	HIV is a				B
	A	Adenovirus	B	Retrovirus	
	C	Herpes virus	D	Adenoassociated virus	
136	Where does T cell maturation take place?				B
	A	Bone marrow	B	Thymus	
	C	Spleen	D	Lymph node	
137	Which of the following amino acid is negatively charged?				B
	A	Glycine	B	Aspartic acid	
	C	Proline	D	Histidine	
138	Geneticist was trying to understand the mode of inheritance of disease. He identified an affected mother transfer the disease to all children (both male and female). What is the mode of inheritance?				A
	A	Mitochondrial inheritance	B	Incomplete penetrance	
	C	Linkage disequilibrium	D	Genomic imprinting	



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139	C value paradox is:				A
	A	The amount of DNA in a haploid genome (the 1C value) does not seem to correspond strongly to the complexity of an organism	B	The amount of DNA in a haploid genome (the 1C value) seem to correspond strongly to the complexity of an organism	
140	Which organ has the capability to regenerate?				B
	A	Brain	B	Liver	
141	The cause of muscle fatigue				D
	A	Lactic acid is formed and accumulated in the muscle	B	Oxygen can't get to the muscle fast enough to keep up with the amount of energy the muscle needs.	
142	The principal place of erythrocyte destruction in most of domestic animals is:				A
	A	spleen	B	bone marrow	
143	Which technique is used for the detection and quantification of a specific DNA sequence in DNA samples?				C
	A	Northern blotting	B	Western Blotting	
144	Which of following step is essential to reduce the nonspecific background in Western blotting?				A
	A	Incubation with 10% BSA	B	Incubation with specific secondary antibody	
145	Which of the following technique will help to determine the heterogeneity of sample				D
	A	PCR	B	RNA-seq	
146	Only single membrane is found in which organelle?				B
	A	Chloroplast	B	Lysosome	
147	Presence of which organism convert the milk to curd				A
	A	Bacteria	B	Fungi	



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Question Paper

Exam Date: 30 April 2023

Time: 10:30 am to 12:30 pm

	C	Virus	D	Protozoa	
148	Which of the following sequence is not found in matured mRNA?				A
	A	Intronic	B	3'UTR	
	C	5'UTR	D	CDS	
149	Which of the following can differentiate in any type of cells				B
	A	Mesenchymal stem cells	B	Pluripotent stem cell	
	C	Neuronal stem cell	D	Endothelial cells	
150	Which of the following can enter the blood brain barrier?				A
	A	Exosome	B	Macrophages	
	C	CTLs	D	Neutrophils	
151	Oxidative phosphorylation occurs in which compartment of cell?				B
	A	Nucleus	B	Mitochondria	
	C	Cytoplasm	D	Golgi	
152	Which is the first step while performing PCR?				B
	A	Annealing	B	Denaturation	
	C	Amplification	D	Renaturation	
153	Which of the following is not an epigenetic tag?				C
	A	DNA methylation	B	Histone modification	
	C	Protein modification	D	RNA epigenetics	
154	Which of the following rRNA is not found in eukaryotic ribosome?				D
	A	5S	B	28S	
	C	5.8S	D	16S	
155	Which of the effect is not found in living organism or in a cell?				A
	A	Hawking effect	B	Doppler effect	
	C	Crowding effect	D	Bohr effect	
156	Which of the following is Antigen Presenting Cells?				A
	A	B cells	B	Endothelial cells	
	C	Memory T cells	D	Plasma cells	
157	Which breeding is used to overcome breeding depression?				A
	A	Outcrossing	B	Inbreeding	
	C	Crossbreeding	D	Interspecific hybridization	
158	Genetic disorder which results from the trisomy of chromosome 21?				C
	A	Turner syndrome	B	Patau Syndrome	
	C	Down syndrome	D	Cleft lip syndrome	
159	Stable change in gene function however no changes occur in gene sequence is termed as				C
	A	Epistasis	B	Mutation	
	C	Epigenetics	D	Pleiotrophism	
160	Introduction of foreign DNA to animal cell is termed as				A
	A	Transfection	B	Transduction	



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	C	Transformation	D	Conjugation	
161	The leakage of a fluid out of its contained space into the surrounding area especially blood or blood cells from vessel is termed as:				A
	A	Extravasation	B	Inflammation	
	C	Metastasis	D	Infiltration	
162	Biological medicine highly similar to another already approved medicine				A
	A	Biosimilar	B	Bioconjugates	
	C	Biologics	D	Immunoconjugates	
163	Which of the following can be used for the targeted therapy for cancer?				C
	A	methotrexate	B	5-fluorouracil	
	C	Antibody drug conjugates	D	cytarabine	
164	Name of company producing Covaxin is				A
	A	Bharat Biotech	B	Serum Institute	
	C	Pfizer	D	Sanofi Pasteur	
165	Which of the following strategy cannot be used for Cancer treatment				A
	A	Mesenchymal stem cell therapy	B	Oncolytic therapy	
	C	CART cell therapy	D	Combination therapy	
166	An interdisciplinary field medicine that applies engineering and life science principles to restore injured tissues				B
	A	Personalised medicine	B	Precision medicine	
	C	Regenerative medicine	D	Tailored medicine	
167	Okazaki fragments are formed during which cellular process?				B
	A	Splicing	B	Replication	
	C	Translation	D	Transcription	
168	What is the function of <i>tra</i> gene of F plasmid?				B
	A	Virulence	B	Both eukaryotic and bacterial	
	C	Antibiotic resistance	D	Eukaryotic systems	
169	Which of the following is used during the termination of DNA sequencing?				A
	A	dideoxynucleotides	B	dNTP	
	C	pseudouridine	D	cyclic nucleotide monophosphate	
170	In which of the following condition people have malaria and carry a gene that provides partial protection against anemia?				B
	A	Sickle cell disease occurs when a person inherits two abnormal copies of the β -globin gene	B	Sickle cell disease occurs when a person inherits one abnormal and one normal copies of the β -globin gene	
	C	Sickle cell disease occurs when a person inherits two abnormal copies of the α -globin gene	D	Sickle cell disease occurs when a person inherits one abnormal and one normal copies of the α -globin gene	
171	The expression of protein from one species into the cell of another species is known as				D
	A	Homologous protein	B	Orthologous protein	



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	C Paralogous protein	D Heterologous protein	
172	Which of the following virus is not used for gene therapy?		B
	A Sendai virus	B Papilloma virus	
	C Retrovirus	D Adeno associated Virus	
173	Which is one of the largest cells in human body?		B
	A Macrophages	B Ovum	
	C Neutrophil	D Endothelial cells	
174	Which of the following antibiotic is not used in animal cell culture		B
	A Penicillin	B Ampicillin	
	C Streptomycin	D Gentamycin	
175	Which of the following animal doesn't have estrous cycle?		A
	A Monkey	B Rat	
	C Rabbit	D Lion	
176	Which of the following cannot be biological samples for DNA profiling		C
	A WBC	B Hair follicle	
	C RBC	D Sperm	
177	Cells which no longer divide (such as certain specialized cells found in the human brain) remain in which phase of the cell cycle?		C
	A Prophase	B M Phase	
	C G0 phase	D G2 Phase	
178	Which of the following supplement is essential during pregnancy		C
	A Estrogen	B Progesterone	
	C Folic acid	D Retinoic acid	
179	Warburg effect mainly occur in which of the following cells		A
	A Cancer cells	B Epithelial cells	
	C Liver cells	D Neuron cells	
180	During cDNA preparation a No RT reaction is done to check which of the following		C
	A If cDNA has been formed	B If there is RNA contamination	
	C If there is DNA contamination	D If there is DNAase contamination	
181	What is not essential during invitro cell culture?		A
	A Gravity	B Temperature	
	C pH	D Humidity	
182	Somatic BCR-ABL gene fusion occur in which of the following disease		B
	A Early pregnancy loss	B Chronic myelogenous leukemia	
	C Alzheimer's disease	D Autoimmune disease	
183	Technique used to determine the 3D structure of protein is		A
	A X-ray crystallography	B Nanodrop	
	C Microscopy	D Flow cytometry	
184	NETosis is the process which occur in which of the following cells		C
	A Neuron	B B cells	



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	C Neutrophils	D Macrophages	
185	Which of the following is not a globulin?		B
	A Alpha	B Theta	
	C Beta	D Gamma	
186	Which of the following organelle doesn't contain DNA?		D
	A Nucleus	B Mitochondria	
	C Chloroplast	D Endosomes	
187	Which of the following vitamin is hormone precursor?		B
	A Vitamin A	B Vitamin D	
	C Vitamin C	D Vitamin K	
188	In the ABO blood group system in humans, if a person of type-A blood has children with a person of type-A blood, what blood types could their children have?		A
	A Type-A, type-O	B Type-B, type-A	
	C Type-AB, type-A	D Type-AB, type-A, type-B and type-O	
189	In a cross of AaBb x AaBb, what fraction of the offspring will be homozygous for both recessive traits?		D
	A 9/16	B 1/2	
	C 3/16	D 1/16	
190	DNA replications occur in which phase of cell cycle		C
	A G ₀	B G ₂	
	C S phase	D M phase	
191	In which of the following disease male are usually affected?		A
	A X linked recessive	B Autosomal dominant	
	C Autosomal recessive	D Mitochondrial inheritance	
192	Which of the following is the coding region of mRNA		D
	A 3'UTR	B intron	
	C 5'UTR	D CDS	
193	Spermatogenesis result in formation of one of following		A
	A Haploid sperm	B Tetraploid sperm	
	C Diploid sperm	D Hexaploidy sperm	
194	The histone protein which is not found in octamer is		A
	A H1	B H3	
	C H2A	D H4	
195	Which of the following help in proper folding of protein?		A
	A HSPs	B RNPs	
	C Tubulin	D NSPs	
196	Polycistronic mRNA transcription is a feature of		C
	A T cells	B B cells	
	C Prokaryotic cells	D Plant cells	
197	The function of protein kinase is one of the following?		A



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	A	Phosphorylation	B	Methylation	
	C	Sumolyation	D	Acetylation	
198	The phages infecting bacteria are called?				D
	A	Virus	B	Plasmids	
	C	Cosmids	D	Bacteriophage	
199	CRISPR was identified in which organism?				A
	A	Bacteria	B	Mammalian Cells	
	C	Yeast	D	Insect Cells	
200	Which of the following cell are being activated and differentiated into plasma cells upon exposure to antigen?				D
	A	T cells	B	Macrophages	
	C	Dendritic cells	D	B cells	