Application No. : _____.

Gujarat Biotechnology Research Centre

Animal Biotechnology Mains Exam

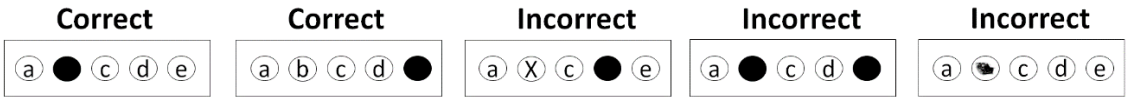
Scientist-B (Group-I)

Total MCQ: 200 | Total Duration: 2 Hours

Do not open unless asked to do so

Instructions for Candidate:

1. This question booklet contains 200 questions, and each correct answer carries 1 mark.
2. Every attempted question with an incorrect answer shall carry a negative mark of 0.25.
3. Choose 'E' Option if you don't want to attempt a question, if no option is marked, 0.25 marks will be deducted.
4. Use only Blue/Black Ball Point Pen to darken the appropriate circle in OMR.
5. Please darken the complete circle.
6. Darken **ONLY ONE CIRCLE** for each question as shown below:



7. The answer once marked, cannot be changed.
8. Please do not make any stray marks on the Question Booklet.
9. Do not fold the OMR sheet.
10. Rough work must be done on the blank page of the Question Booklet.
11. Mark your answer in the appropriate space in the Answer Sheet against the Number corresponding to thequestion.
12. The Candidate has to submit a Question booklet and OMR response sheet to the invigilator at the conclusion of the examination.

I have read all the instructions above.

Candidate Signature: _____ **Invigilator Signature:** _____

1	T-cell maturation occurs in_____			
	A	Thymus	C	Liver
	B	Pancreas	D	Thalamus
2	In which species of animal ovulation occurs after end of estrus?			
	A	Buffalo	C	Goat
	B	Sheep	D	Horse
3	Hypo osmotic swelling test (HOST) evaluate_____			
	A	Motility	C	Viability
	B	Sperm membrane integrity	D	Acrosome function
4	Which type of immune response do T-lymphocytes primarily mediate?			
	A	Humoral immunity	C	Cellular immunity
	B	Innate immunity	D	Passive immunity
5	Development of recombinant DNA technology is based on discovery of			
	A	Plasmids	C	cDNA
	B	Restriction endonucleases	D	YACs
6	Which hormone is responsible for “let down of milk”?			
	A	Estrogen	C	Relaxin
	B	Thyroxin	D	Oxytocin
7	β and α cells of pancreas releases _____ and _____ hormone			
	A	Glucagon and Insulin	C	Glucagon and estrogen
	B	Insulin and Glucagon	D	Insulin and Glycogen
8	Human chorionic gonadotropin has _____ like activity in bovines			
	A	FSH	C	Oxytocin
	B	LH	D	Estradiol
9	Which is primary sugar in semen?			
	A	Glucose	C	Galactose
	B	Maltose	D	Fructose
10	Which animals have induced ovulation phenomenon?			
	A	Rabbit and Cow	C	Rabbit and Camel
	B	Rabbit and Dog	D	Elephant and Giraffe
11	Bruce effect in mice involve blockage of _____ secretion which is necessary for maintenance of Corpus Luteum			
	A	Oxytocin	C	Estradiol
	B	Prolactin	D	PGF2α
12	The concept of Genotype and Phenotype was introduced by _____			
	A	Charles Darwin	C	James Watson and Francis Crick
	B	Gregor Mendel	D	Wilhelm Johannsen
13	What principle does the "Law of Purity of Gametes" describe in genetics?			
	A	The likelihood of a genetic variant being inherited by offspring	C	The production of gametes with only one allele for a given trait in homozygous individuals
	B	The proportion of individuals with a particular genotype who exhibit the associated phenotype	D	The independent assortment of alleles for different genes during gamete formation

14	What is penetrance?			
	A	The likelihood of a genetic variant being inherited by offspring	C	The frequency of recombination events during meiosis
	B	The degree of dominance of a genetic allele	D	Percentage of individuals with a given genotypes which exhibits the related phenotypes.
15	What is the name of the visual representation of chromosomes, arranged in pairs according to their size, shape, and other characteristics?			
	A	Chromatogram	C	Karyotype
	B	Chromosome Map	D	Chromosomal Profile
16	When does crossing-over take place during meiosis?			
	A	Prophase I	C	Anaphase I
	B	Metaphase I	D	Telophase I
17	Which of the following bases is produced by the deamination of guanine?			
	A	Xanthine	C	Adenine
	B	Hypoxanthine	D	Cytosine
18	What term refers to the sum total of all the genes in a particular population?			
	A	Gene pool	C	Allelic frequency
	B	Genetic drift	D	Hardy-Weinberg equilibrium
19	Genetic drift refers to:			
	A	The movement of genes from one population to another	C	Random fluctuations in allele frequencies within a population due to chance events
	B	The exchange of genetic material between homologous chromosomes during meiosis	D	The process of natural selection favoring individuals with advantageous traits
20	Who devised the chemical synthesis of DNA?			
	A	James Watson and Francis Crick	C	Rosalind Franklin
	B	Har Gobind Khorana	D	Kary Mullis
21	Which type of restriction enzymes are most commonly used in molecular biology research?			
	A	Type I	C	Type III
	B	Type II	D	Type IV
22	Which major complement component is typically present in serum?			
	A	C1	C	C3
	B	C2	D	C4
23	Who developed the Polymerase Chain Reaction (PCR) technique?			
	A	Kary Mullis	C	Frederick Sanger
	B	James Watson and Francis Crick	D	Barbara McClintock
24	Which enzyme is primarily responsible for replicating mitochondrial DNA (mtDNA) in eukaryotic cells?			
	A	DNA polymerase α (Pol α)	C	DNA polymerase γ (Pol γ)
	B	DNA polymerase β (Pol β)	D	DNA polymerase ε (Pol ε)
25	What is the major form of supercoiling found in chromatin structure?			
	A	Toroidal	C	Plectonemic

	B	Solenoidal	D	Relaxed
26	Which of the following amino acids are particularly abundant in histone proteins?			
	A	Leucine and valine	C	Arginine and lysine
	B	Glycine and proline	D	Aspartate and glutamate
27	Which of the following amino acids does not exhibit optical activity?			
	A	Glycine	C	Serine
	B	Alanine	D	Proline
28	Full name of INAPH is_____			
	A	Information Network for Animal Physiology and Health	C	Information Network for Animal Product and Health
	B	Information Network for Animal Production and Health	D	Information Network for Animal Productivity and Health
29	In which year was the National Dairy Development Board (NDDB) founded?			
	A	1969	C	1971
	B	1965	D	1972
30	Which animal was the first successfully cloned mammal?			
	A	Goat	C	Sheep
	B	Buffalo	D	Cattle
31	Which enzyme is responsible for fragmenting viral DNA in bacteria as a defense mechanism against viruses?			
	A	Endonuclease	C	Polymerase
	B	Exonuclease	D	Ligase
32	The expression of a transgene in the target tissue is identified by a			
	A	Transgene	C	Enhancer
	B	Promoter	D	Reporter
33	Which of the following is commonly used as a vector for cloning genes into higher organisms?			
	A	Retrovirus	C	Salmonella typhimurium
	B	Baculovirus	D	Rhizopus nigricans
34	Which bacterium is used in the production of insulin by genetic engineering?			
	A	*Bacillus subtilis*	C	*Escherichia coli*
	B	*Streptomyces coelicolor*	D	*Pseudomonas aeruginosa*
35	Which of the following is an endonuclease?			
	A	DNase I	C	Protease
	B	Hind II	D	RNase restriction
36	Interferons are			
	A	Anti-bacterial proteins	C	Bacteriostatic proteins
	B	Anti-viral proteins	D	Plant proteins
37	The virus commonly used to infect cell cultures for the production of interferon is			
	A	Corona virus	C	Polio virus
	B	Sendai virus	D	Small pox virus
38	The production of complete animals from somatic cells of an animal is called			
	A	Gene cloning	C	Cell cloning
	B	Animal cloning	D	Plant cloning

39	Which of the following substances prevents the formation of spindle fibers in the process of cell division?			
	A	Cyclin	C	Colchicine
	B	Kinase	D	Growth factor
40	Which molecules regulate the cell cycle?			
	A	Cyclins	C	Cyclins and Cdks
	B	Cdks (Cyclin-dependent kinases)	D	Neutrinos
41	Which of the following techniques involves the transfer of a nucleus from a somatic cell into an enucleated oocyte?			
	A	Somatic cell nuclear transfer	C	*In situ* hybridization
	B	Polymerase Chain Reaction	D	Southern blotting
42	Punched ulcers in abomasum of cattle are characteristic of			
	A	*Theilaria annulate*	C	*Haemonchus contortus*
	B	*Babesia bigemina*	D	*Ostertagia ostertagi*
43	When was Operation Flood I launched in India?			
	A	1960	C	1980
	B	1970	D	1982
44	National Science Day in India is celebrated in the name of:			
	A	Dr. C. V. Raman	C	Dr. Vikram Sarabhai
	B	Dr. Homi Jehangir Bhabha	D	Dr. A. P. J. Abdul Kalam
45	Which of the following is the smallest compartment of the ruminant stomach?			
	A	Rumen	C	Omasum
	B	Reticulum	D	Abomasum
46	The 5 carbon sugar compound present in DNA molecule is:			
	A	Erythrose	C	Ribose
	B	Deoxyribose	D	Ribulose
47	World Organization for Animal Health formerly known as			
	A	World Veterinary Organization (WVO)	C	Office International des Epizooties (OIE)
	B	International Animal Health Organization (IAHO)	D	Animal Health and Welfare Committee (AHWC)
48	Inflammation of lymph node is called as:			
	A	Pharyngitis	C	Typhilitis
	B	Lymphadenitis	D	Laryngitis
49	Example of anaerobic protozoa is:			
	A	Leishmania	C	Trypanosoma
	B	Trichomonas	D	Anaplasma
50	Full name of NIAB			
	A	National Institute of Animal Breeding	C	National Institute of Animal Biotechnology
	B	National Institute of Animal Biology	D	Neo International Animal Biotechnology
51	The female sex chromosome in birds is:			
	A	XO	C	ZW

	B	XY	D	XA
52	Large number of primary sperm abnormalities are indicative of			
	A	Ectopic testes	C	Testicular neoplasm
	B	Testicular degeneration	D	Testicular fibrosis
53	AMUL system of milk marketing follows the principle of			
	A	Co-operative	C	Subsidy purpose
	B	Mutual work	D	Service
54	Central Avian Research Institute (CARI) is located at:			
	A	Izzatnagar	C	Hyderabad
	B	Bengaluru	D	Anand
55	Oligo dT attached to resin is used for the column-based isolation of:			
	A	Prokaryotic DNA	C	Prokaryotic mRNA
	B	Eukaryotic DNA	D	Eukaryotic mRNA
56	The chemical that can be used for precipitation of DNA is:			
	A	Ethyl alcohol	C	Phenol
	B	Isoamyl alcohol	D	Water
57	The maximum probability of making Type-I error is known as:			
	A	Confidence interval	C	Level of significance
	B	Test of significance	D	Rejection region
58	What is the average lifespan of bovine sperm within the female reproductive tract?			
	A	12 hours	C	48 hours
	B	24 hours	D	72 hours
59	_____buffalo breed of India is come under endangered categories			
	A	Bhadawari	C	Banni
	B	Jafarabadi	D	Mehsani
60	Sertoli cell produces the protein hormone which suppresses the production of FSH			
	A	Androgen binding protein	C	Luteinizing hormone
	B	Inhibin	D	Estrogen
61	Spreading of adherent acrosomal granule over the surface of spermatid nucleus			
	A	Golgi phase	C	Acrosomal phase
	B	Cap phase	D	Maturation phase
62	The first dairy co-operative in India was started in the year 1913 at			
	A	Anand	C	Jaipur
	B	Allahabad	D	Pune
63	The source of Taq polymerase used in the PCR reaction is:			
	A	*Escherichia coli*	C	*Staphylococcus aureus*
	B	*Thermus aquaticus*	D	*Proteas spp.*
64	Which is the type of placenta present in bitch?			
	A	Zonary	C	Discoidal
	B	Diffuse	D	Cotyledonary
65	For selection of individuals for traits measured after life, we will prefer			
	A	Indirect selection	C	Pedigree selection
	B	Family selection	D	Direct selection

66	Diploid number of chromosomes in sheep is			
	A	60	C	38
	B	54	D	64
67	Double stranded segmented RNA with 10-12 segments is the features of family			
	A	Reoviridae	C	Orthomyxoviridae
	B	Retroviridae	D	Paramyxoviridae
68	Separation of RBCs from virus is called			
	A	Elution	C	Hemagglutination-Inhibition
	B	Hemagglutination	D	Eclipse
69	Growth of brucella organisms is favored due to			
	A	Erythritol	C	Glucose
	B	Sorbitol	D	Protein
70	Genes cloned with M 13 based vector can be obtained in the form of_____			
	A	Single stranded DNA	C	Single stranded RNA
	B	Double stranded DNA	D	Phase particle
71	Down syndrome is an example of			
	A	Monosomy	C	Triploidy
	B	Polyploidy	D	Trisomy
72	The criss-cross pattern of inheritance is seen in			
	A	Sex limited trait	C	Sex influence trait
	B	Sex linked trait	D	x link trait
73	Gujarat has total_____ breeds of buffaloes.			
	A	Two	C	Three
	B	Four	D	Six
74	Bacterial ribosomes typically consist of two subunits, the smaller one (30 S) contains:			
	A	Single RNA molecule (16 S) and 21 polypeptides.	C	Single RNA molecule (18 S) and 21 polypeptides
	B	Two RNA molecules (30 S and 50 S) plus 31 different polypeptides.	D	Two RNA molecules (23 S and 5 S) plus 31 different polypeptides
75	Which of the following hormones are responsible for the "fight-or-flight" response?			
	A	Adrenaline	C	Estrogen and progesterone
	B	Insulin and glucagon	D	Thyroxin and melatonin
76	Peptide bond is a _____			
	A	Covalent bond	C	Metallic bond
	B	Ionic bond	D	Hydrogen bond
77	Rabies virus belongs to the genus_____			
	A	Vesiculovirus	C	Lyssavirus
	B	Adenovirus	D	Novirhabdovirus
78	What is the name of the Belgian cytologist who first demonstrated lysosomes?			
	A	James Watson	C	Francis Crick
	B	Christian de Duve	D	Rosalind Franklin
79	Which component of the cytoskeleton is particularly useful in tumor diagnosis?			

	A	Microtubules	C	Intermediate filaments
	B	Microfilaments (Actin filaments)	D	Microvilli
80	From which organism is oxytetracycline primarily obtained?			
	A	*Streptomyces rimosus*	C	*Saccharomyces cerevisiae*
	B	*Escherichia coli*	D	*Pseudomonas aeruginosa*
81	What does BCG stand for in the context of vaccination?			
	A	Bacillus Calmette-Guérin	C	Bacillus Camus-Guérin
	B	Bovine Calmette-Guérin	D	Bovine Camus-Guérin
82	What would you measure to estimate the sperm producing capability of a bull?			
	A	Body weight and age	C	Penis length
	B	Scrotal circumference	D	Testicular firmness
83	Which is an estimator of population variation?			
	A	Standard deviation	C	Regression
	B	Mean	D	Correlation
84	What is the basic genetic effect of inbreeding?			
	A	Increased homozygosity	C	Increased heterozygosity
	B	Decreased homozygosity	D	No effect on heterozygosity
85	Which of the following factors negatively affect bovine sperm viability?			
	A	Low pH	C	High temperature
	B	Presence of seminal plasma	D	Exposure to oxygen
86	What term is commonly used to define three weeks before and three weeks after calving?			
	A	The dry period	C	The lactation period
	B	The transition period	D	The postpartum period
87	What compound forms the backbone of both phospholipids and triglycerides?			
	A	Glycerin	C	Glycerol
	B	Triolein	D	Fatty acids
88	Epistatic ratio of 9:7 is observed in			
	A	Recessive epistasis	C	Dominant epistasis
	B	Duplicate Recessive epistasis	D	Direct epistasis
89	Polyploidy refers to_____			
	A	An extra copies of a gene adjacent to each other on a chromosome	C	A chromosome which has replicated but not divided
	B	An individual with complete extra sets of chromosomes	D	Multiple ribosomes present on a single mRNA
90	Plasmid vectors for cloning_____			
	A	can generally accommodate larger inserts than phage vectors can	C	can accommodate inserts of over 100 kilobases
	B	grow within bacteria, and are present in bacterial colonies on an agar plate	D	include centromeres to allow propagation in yeast
91	Which of the following statements about heritability are true?			

	A	is a measure of level of gene linkage	C	is a measure of the level of heterozygotes in a population
	B	is a measure of proportion of repeated DNA in an organism	D	is a measure of the proportion of variation that is due to genetic causes
92	Introduction of DNA into cells by exposing to high voltage electric pulse			
	A	Electrofussion	C	Electrolysis
	B	Electrofission	D	Electroporation
93	Endometrial cups act as a source of			
	A	LH	C	eCG
	B	FSH	D	Placental Lactogen
94	Which of the following is a temporary endocrine structure?			
	A	Corpus luteum	C	Hypothalamus
	B	Pituitary gland	D	Thymus gland
95	Preovulatory luteinization of follicles is observed in following species			
	A	Bitch	C	Sow
	B	Queen	D	Ewe
96	The fern pattern of cervical mucus during estrus is associated with_____			
	A	High Magnesium content	C	High Manganese content
	B	High sodium chloride content	D	High Zinc level
97	Chemical nature of LH & FSH is			
	A	Lipoprotein	C	Glycoprotein
	B	Steroid	D	Peptide
98	Heat destroys micro-organism by the destruction of			
	A	Nucleic acids	C	Fats
	B	Proteins	D	Minerals
99	Antibody is produced by			
	A	Plasmablast	C	Basophil
	B	Neutrophil	D	Macrophage
100	The release of spermatozoa from the cytoplasmic pockets of the Sertoli cells called as_____			
	A	Spermatogenesis	C	Spermatocytogenesis
	B	Spermiation	D	Spermiogenesis
101	Which of the following structure is absent in prokaryotic cells?			
	A	Nuclear Envelope	C	Ribosomes
	B	Plasma membrane	D	Mesosome
102	Which of the following animal has two separate circulatory pathways?			
	A	Shark	C	Crocodile
	B	Blue whale	D	Snakes
103	Which of the following animal is a connecting link between reptiles and mammals?			
	A	Archaeopteryx	C	Bat
	B	Duck-billed platypus	D	Peripatus
104	What is the number of chromosomes in an individual with Klinefelter's syndrome			
	A	44	C	46

	B	45	D	47
105	Which of the following organism causes syphilis?			
	A	*Neisseria gonorrhoea*	C	*Trichophyton mentagrophytes*
	B	*Treponema pallidum*	D	*Yersinia pestis*
106	What is the length of human DNA containing 6.6 x 10^9 bp?			
	A	2.2 nm	C	2.2 m
	B	22 nm	D	22 m
107	If a dsDNA has 30% adenine, what would be its cytosine content?			
	A	70%	C	40%
	B	30%	D	20%
108	Which of the following organ secrete the hormone "Relaxin"?			
	A	Intestine	C	Ovary
	B	Liver	D	Testis
109	The *Diptheria, Pertussis ,Tetanus* (DPT) vaccine consists of			
	A	whole cell lysate of *Diptheria, Pertussis, Tetanus*	C	heat killed strains of *Diptheria, Pertussis, Tetanus*
	B	live attenuated strains of *Diptheria, Pertussis, Tetanus*	D	toxoid of *Diptheria, Tetanus*, and heat killed whole cells of *Pertussis*
110	Which of the following amino acids is NOT involved in gluconeogenesis?			
	A	Lysine	C	Arginine
	B	Alanine	D	Glutamate
111	Which one of the following ion pairs is involved in nerve impulses?			
	A	Na^+, Cl^-	C	K^+, Cl^-
	B	K^+, Ca^{2+}	D	Na^+, K^+
112	Which of the following sugars are the hydrolytic product of Lactose by the enzyme Lactase?			
	A	Glucose + galactose	C	Galactose + galactose
	B	Galactose + fructose	D	Glucose + glucose
113	The hormone vasopressin is synthesized in?			
	A	Amygdala	C	Pituitary gland
	B	Hypothalamus	D	Pancreas
114	Which of the following parts of the human digestive tract contains the crypts of Liberkuhn?			
	A	Small Intestine	C	Colon
	B	Caecum	D	Stomach
115	After surgical removal of pancreas, which of the following remain poorly digested after food?			
	A	Lipids and proteins only	C	Lipids, proteins and carbohydrates
	B	Proteins and carbohydrates only	D	Lipids and carbohydrates only
116	Which of the following organ in human body NOT a site of white blood cells production?			
	A	Liver	C	Bone marrow
	B	Spleen	D	Kidney
117	Which of the following biomolecules contain a phosphodiester bond ?			
	A	Diglyceride	C	Nucleotides

	B	Polysaccharides	D	Polypeptides
118	The term "genetics" was coined by:			
	A	T.H. Morgan	C	Gregor Mendel
	B	William Bateson	D	Wilhelm Johannsen
119	The excretory organs of Platyhelminthes are:			
	A	Flame Cells	C	Malpighian tubule
	B	Nephridia	D	Kidney
120	Which of the following organism contains phallic gland, a part of the male reproductive system?			
	A	Helminthes	C	Oysters
	B	Sea urchins	D	Cockroach
121	The cutting of DNA at specific locations become possible after discovery of:			
	A	Lipases	C	Probes
	B	Ligases	D	Restriction endonucleases
122	Graft versus host rejection in transplantation studies is mainly due to:			
	A	Adaptive immune response	C	Innate immune response
	B	Humoral immune response	D	Cell-mediated immune response
123	In polytene chromosomes, Balbiani rings are the site of:			
	A	DNA synthesis	C	RNA and protein synthesis
	B	Lipid synthesis	D	Fatty acid synthesis
124	The largest percentage of mother's milk consists of which type of immunoglobulins?			
	A	IgA	C	IgD
	B	IgM	D	IgG
125	The two polypeptides of human insulin are linked together with:			
	A	Phosphodiester bond	C	Disulfide bridges
	B	Salt-bridges	D	Peptide bond
126	Which of the following term correctly represents the complex of ribosomes attached to single strand of a RNA?			
	A	Ribonucleoproteins	C	Polypeptides
	B	Polysomes	D	Okazaki fragments
127	Which of the following is NOT a feature of the plasmids?			
	A	Single-stranded	C	Origin of replication
	B	Circular	D	Linear
128	Which part of the male reproductive system produces and stores sperm in cattle?			
	A	Vas deferens	C	Prostate gland
	B	Seminal vesicles	D	Epididymis
129	The amino acid Tryptophan is the precursor for the synthesis of:			
	A	Thyroxine	C	Cortisol
	B	Melatonin	D	Corticosterone
130	Which of the following represents the stop codon?			
	A	AUG	C	UGG
	B	UAA	D	UUA
131	Widal test is used to diagnose:			
	A	Typhoid fever	C	Scarlet fever

	B	African sleeping sickness	D	Malaria
132	Which of the following glucose transporter is present in intestine for the transport of fructose sugar?			
	A	GLUT1	C	GLUT5
	B	GLUT3	D	GLUT7
133	The accumulation of long chain fatty acids in the liver inhibits the enzyme:			
	A	Hexokinase	C	Glucose-6-phosphatase
	B	Glucokinase	D	Triosephosphate isomerase
134	During DNA replication, unwinding of DNA will be done by:			
	A	Topoisomerases	C	Polymerases
	B	Helicases	D	Endonucleases
135	The number(s) of origin of replication present in *E. coli* genome are:			
	A	1000	C	10
	B	100	D	1
136	During DNA replication, which enzyme is used to remove RNA primers from the Okazaki fragment and fill the gap between the DNA?			
	A	DNA Helicases	C	DNA polymerase I
	B	RNase H	D	Reverse transcriptase
137	The enzyme Nuclease S1 is involved in:			
	A	Degradation of single stranded RNA	C	Both a and b
	B	Degradation of single stranded DNA	D	Translation
138	Embryonic lethality in knockout models can NOT be avoided by using a:			
	A	Tet-On model	C	Cre/Lox model
	B	Tet-Off model	D	CRISPR/Cas9 based deletion of coding exons
139	For generation of conditional knock out mice using Cre/Lox system, the loxP sites are integrated in:			
	A	Random sites throughout the genome	C	Introns of either side of genome that is to be deleted
	B	Near to Cre locus	D	the mRNA
140	Which of the following process does NOT occur in *E. coli*?			
	A	Replication	C	Splicing
	B	Transcription	D	Translation
141	Which of the following is NOT related to telomere?			
	A	Chromosomal degradation	C	Replication
	B	Maintenance of chromosomes	D	Cell division
142	Which of the following nucleotide repeats are rich in telomeres?			
	A	Adenine rich	C	Cytosine rich
	B	Guanine rich	D	Thymine rich
143	The main uses of an expression vector are for:			
	A	DNA cloning	C	DNA purification
	B	Protein production	D	Library preparation
144	Which of the following protein does NOT involve in cell to cell interaction?			

	A	Cytochrome C	C	Integrin
	B	Cadherin	D	Neural cell adhesion molecule
145	The excretory organs of Cockroaches are:			
	A	Kidney	C	Malpighian tubule
	B	Nephridia	D	Flame cells
146	Which of the following is a intracellular secondary messenger?			
	A	Inositol triphosphate	C	diacylgycerol
	B	Acetylcholine	D	a and c
147	Which of the following enzyme acts in the pentose phosphate pathway?			
	A	Succinate dehydrogenase	C	Phosphofructokinase-1
	B	6-phosphogluconate dehydrogenase	D	Fructose 2, 6-bisphosphatase
148	The first amino group enters in urea cycle is :			
	A	Ornithine	C	Carbamoyl phosphate
	B	Citrulline	D	Argininosuccinate
149	Where are oocytes located within the female reproductive system of cattle?			
	A	Fallopian tube	C	Ovary
	B	Uterus	D	Cervix
150	Methotrexate, an anticancer drug inhibits the activity of:			
	A	Thymidine synthase	C	DNA polymerase
	B	Dihydrofolate reductase	D	Ribonucleotide reductase
151	Severe combined immunodeficiency syndrome (SCID) is caused by the deficiency of:			
	A	CTP synthetase	C	Glutamine synthetase
	B	Thymidylate synthase	D	Adenosine deaminase
152	Which of the following genetic disorder caused by the deficiency of an enzyme Hypoxanthine-guanine phosphoribosyltransferase (HGPRT)?			
	A	Lesch-Nyhan syndrome	C	Non-specific X-linked mental retardation
	B	Duchenne muscular dystrophy	D	Cystic fibrosis
153	Gamma-aminobutyric acid (GABA) can be biologically produced by:			
	A	Glutamate hydroxylase	C	Glutamate synthase
	B	Glutamate decarboxylase	D	Glutamine synthase
154	Thromboxane A2 (TXA2) is formed from prostaglandin H2 (PGH2) by the enzyme:			
	A	Cyclooxygenase I	C	Thromboxane synthase
	B	Cyclooxygenase II	D	PGH2 synthase
155	High level of cardiolipins and low level of cholesterol are present in:			
	A	Inner membrane of mitochondria	C	Plasma membrane
	B	Outer membrane of mitochondria	D	Myelin sheath
156	Choline containing phospholipids include:			
	A	Phosphatidylethanolamine	C	Sphingomyelin
	B	Phosphatidylserine	D	Phosphatidylglycerol

157	Which of the following pathways are required for synthesizing purine nucleotides?			
	A	Salvage pathway	C	a and b
	B	de novo pathway	D	Pentose phosphate pathway
158	Which of the following antitumor agent acts as an inhibitor of purine biosynthesis pathway?			
	A	Methotrexate	C	Azaserine
	B	Taxol	D	Glutamine
159	What is the main nitrogenous excretory product of birds?			
	A	Urea	C	Amino acids
	B	Ammonia	D	Uric acid
160	What are the end products of purine catabolism in human?			
	A	Allantoin	C	Ammonia
	B	Uric acid	D	Urea
161	Which of the following cyclin take part in G1-phase of cell division?			
	A	Cyclin A	C	Cyclin E
	B	Cyclin B	D	Cyclin D
162	Which of the following metabolic pathways is an example of amphibolic pathway?			
	A	Glycolysis	C	Kreb's cycle
	B	Fatty acid synthesis	D	Pentose phosphate pathway
163	Which of the following is an inhibitor of electron transport chain?			
	A	Antimycin A	C	Mannoheptulose
	B	Malonate	D	Sodium fluoroacetate
164	Which of the following acts as an uncoupler of oxidative phosphorylation ?			
	A	Cyanide	C	Rotenone
	B	Thermogenin	D	Taxol
165	In an aerobic respiration, one molecule of glucose on complete oxidation yields how many molecules of ATP?			
	A	38	C	34
	B	36	D	32
166	Urea cycle takes place in:			
	A	Liver	C	Nephron
	B	Kidney	D	Loop of Henle
167	Phenylketonuria is caused due to deficiency of the enzyme:			
	A	Aminotransferase	C	Phenylalanine synthetases
	B	Phenylalanine hydroxylase	D	Phenylalanine ammonia-lyase
168	Lactic acid cycle is also known as			
	A	Glyoxylate cycle	C	Cori cycle
	B	Citric acid cycle	D	Fatty acid synthesis and degradation
169	Which of the following is the first body segment of the earthworm?			
	A	Clitellum	C	Typhlosole
	B	Peristomium	D	Nephridiopores
170	In sponges, water enters the spongocoel through the hundreds of tiny pores and exits through the large opening called:			

	A	Ostia	C	Flagellated cells
	B	Osculum	D	Spicules
171	In which of the following organism, eggs and sperms both are produced by the same individual?			
	A	Homogamous	C	Oogamous
	B	Heterogamous	D	Hermaphrodite
172	Which of the following is the components of cell wall of gram-negative bacteria?			
	A	Peptidoglycan	C	Polypetides
	B	Lipopolysaccharides	D	Cardiolilpins
173	Which of the following microbes is a member of the phylum Spirochaetes?			
	A	*Staphylococcus aureus*	C	*Leishmania donovani*
	B	*Treponema pallidum*	D	*Mycobacterium bovis*
174	Which of the following immunoglobulins is pentameric in nature?			
	A	IgG	C	IgM
	B	IgA	D	IgE
175	Which of the following type of dendritic cells do NOT express MHC II molecules on their surface?			
	A	Myeloid dendritic cells	C	Lymphoid dendritic cells
	B	Follicular dendritic cells	D	Langerhans cells
176	Which of the following immune cells are present in central nervous system (CNS)?			
	A	Kupffer cells	C	Microglial cells
	B	Myeloid cells	D	Mesangial cells
177	Basophils mainly attracts which type of immunoglobulins?			
	A	IgA	C	IgG
	B	IgE	D	IgM
178	Chediak-Higashi syndrome is caused due to lack of:			
	A	NK cells	C	Macrophages
	B	Neutrophils	D	Basophils
179	The majority of carbon dioxide is transported as:			
	A	Bicarbonate	C	Carbaminohaemoglobin
	B	Dissolved carbon dioxide	D	Gaseous carbon dioxide
180	Which of the following vitamins deficiency caused pellagra?			
	A	Vitamin B1	C	Vitamin B3
	B	Vitamin B12	D	Vitamin K
181	Actinomycosis is caused by:			
	A	Fungal infection	C	Parasitic infection
	B	Bacterial infection	D	Viral infection
182	Which of the following is the infective stage of *Entamoeba histolytica*?			
	A	Quadrinucleated cyst	C	Metacyclic trophozoite
	B	Trphozoite	D	Amoeboid
183	The Sabin-Feldman dye test is used in the diagnosis of:			
	A	Leishmaniasis	C	Filariasis
	B	Crptosporidiosis	D	Toxoplasmosis
184	Which of the following is the larval stage of *Taenia solium*?			

	A	Cysticercus cellulosae	C	Cysticercus bovis
	B	Porcine cysticercosis	D	Planulae
185	Which of the following deficiency is caused by *Ancyclostoma duodenale*?			
	A	Vitamin K	C	Niacin
	B	Vitamin B12	D	Iron
186	Which of the following enzyme required for the synthesis of cyclic-AMP?			
	A	Adenylate cyclase	C	Cytidine diphosphate diacylglycerol synthase
	B	Phosphatidyl inositol synthase	D	Phospholipase C
187	Which of the following hormones stimulate the synthesis of testosterone in fetus?			
	A	Luteinizing hormone	C	Follicle-stimulating hormone
	B	Human chorionic gonadotropin	D	Inhibin B
188	How many amino acids are present in a single protein (monomer) of human insulin?			
	A	50	C	52
	B	51	D	53
189	The affinity of haemoglobin to oxygen is decreased by:			
	A	Increasing pH of blood	C	Exercise
	B	Increasing body temperature	D	Decreasing body temperature
190	The hormone cholecystokinin (CCK) is secreted by:			
	A	Jejunum	C	Duodenum
	B	Ileum	D	Caecum
191	What is known as "rapture of the deep" during deep sea diving?			
	A	Altitude sickness	C	Motion sickness
	B	Nitrogen narcosis	D	Oxygen toxicity
192	Which of the following best describes when RBC is placed in a hypotonic solution?			
	A	Cells would swell and hemolyze	C	No change
	B	Cells would shrink and hemolyze	D	Cell would swell and then shrink
193	Which of the following muscle protein helps in the contraction of both smooth and skeletal muscle?			
	A	Myosin	C	Actin
	B	Troponin	D	Tropomyosin
194	When large amounts of ketone bodies accumulate in the body, the blood pH:			
	A	Increases	C	No change in the physiological pH
	B	Decreases	D	First increases and then decreases
195	Which of the following diseases is an autosomal dominant disorder?			
	A	Duchenne muscular dystrophy	C	Werner syndrome
	B	Cystic fibrosis	D	Huntington disease
196	Which of the following is an example of filamentous bacteria?			
	A	Actinomycetes	C	Mycoplasma
	B	Spirochetes	D	Herpes
197	The defence organs in hydra are:			
	A	Interstitial cells	C	Nematocysts

	B	Hypostome	D	Cnidoblasts
198	In Gram staining of bacteria, the Iodine acts as:			
	A	Mordant	C	Catalyst
	B	Chelator	D	Cofactor
199	Marasmus in infants and children are caused due to the deficiency of:			
	A	Fats	C	Vitamins
	B	Proteins	D	Minerals
200	Study of tissues is called:			
	A	Cytology	C	Histology
	B	Anatomy	D	Embryology

------- Space for Rough Work -------

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