



Gujarat Biotechnology Research Centre
Scientist - B (Group-1) Prelims

Question Paper

Exam Date : 30 April 2023

Time: 09:00 am to 10:00 am

1	નિપાત લખો : બસ ગામ બહાર જ ઊભી રહી ગઈ.				A
	A	જ	B	રહી	
	C	બસ	D	ગામ	
2	માતપિતા ક્યો સમાસ છે ?				B
	A	તત્પુરુષ	B	દ્વંદ્વ	
	C	દ્વિગુ	D	બહુવ્રીહિ	
3	સુરત તું જ રડતી સૂરત - પંક્તિનો અલંકાર જણાવો				B
	A	વ્યતિરેક	B	શ્લેષ	
	C	યમક	D	ઉપમા	
4	અનુષ્ટુપ છંદમાં કેટલા ચરણ હોય છે ?				C
	A	8	B	3	
	C	4	D	2	
5	મશક એટલે ?				A
	A	પાણી ભરવાનું ચામડાનું સાધન	B	માથું, મસ્તક	
	C	ઘડો	D	માખણ - મસકો	
6	મિસ્કીન ઉપનામ ક્યાં સાહિત્યકારનું છે ?				A
	A	રાજેશ વ્યાસ	B	રમણ નીલકંઠ	
	C	મધુસુદન ઠક્કર	D	મનુભાઈ પંચોલી	
7	ગુજરાત સાહિત્ય અકાદમીનું કાર્યાલય ક્યાં આવેલું છે ?				B
	A	રાજકોટ	B	ગાંધીનગર	
	C	અમદાવાદ	D	વડોદરા	
8	ગુજરાતી ભાષાની પહેલી નવલકથા કઈ ?				D
	A	સોરઠ તારા વહેતા પાણી	B	ચક્રાવો	
	C	સરસ્વતી ચંદ્ર	D	કરણધેવો	
9	જય જય ગરવી ગરવી ગુજરાત ના કવિ કોણ છે ?				A
	A	નર્મદ	B	ઉમાશંકર જોશી	
	C	ન્હાનાલાલ	D	દલપતરામ	
10	ઓખાહરણના સર્જકનું નામ શું છે ?				D
	A	નરસિંહ મહેતા	B	મીરાબાઈ	
	C	અખો	D	પ્રેમાનંદ	
11	Give synonym of: Artisan				A
	A	Skilled worker	B	Show	
	C	Heavy gun	D	Art	
12	The antonym of 'suspicious' is				C
	A	Doubtful	B	unsure	
	C	Confident	D	dubious	
13	___ it rains, we must start.				D
	A	If	B	When	
	C	While	D	Even if	
14	He cut the tree ___ an axe.				D



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	A	By	B	For	
	C	On	D	With	
15	Give the plural form: 'Calf'				B
	A	Calf	B	Calves	
	C	Calfes	D	Calfs	
16	Suhas is working faithfully in his office. What is the form of word 'faithfully' ?				B
	A	Pronoun	B	Adverb	
	C	Adjective	D	Noun	
17	That which cannot be conquered is (A) (B) (C) (D)				D
	A	invisible	B	inviolate	
	C	indivisible	D	invincible	
18	Choose the correct voice: Has the government cancelled the flight due to rough weather?				A
	A	Has the flight been cancelled by the government due to rough weather?	B	Has the flight been cancelled by the government?	
	C	Has the flight been cancelled due to rough weather?	D	Has the flight been cancelled by rough weather?	
19	The tennis players were at the buzzer. It means they were				C
	A	pressing the button.	B	ringing the bell.	
	C	at the end of a game.	D	at the crease line.	
20	When we went to the cinema, the film _____.				D
	A	had already start	B	have already started	
	C	would already start	D	had already started	
21	મીના અને રીના વચ્ચે અનુક્રમે 3 : 5 ના પ્રમાણમાં 4000 રૂ. વહેંચતા રીનાને કેટલા રૂપિયા મળશે ?				B
	A	2000	B	2500	
	C	1500	D	1000	
22	સૌથી મોટી સંખ્યા શોધો.				D
	A	256783412.304	B	256783421.305	
	C	256783421.345	D	256784312.034	
23	ACE: HIL:: MOQ : ?				A
	A	TUX	B	XVT	
	C	SUW	D	WUS	
24	"ENCYCLOPEDIA" શબ્દમાંથી કયો શબ્દ ન બની શકે?				C
	A	CYCLE	B	PENCIL	
	C	YOKE	D	DIAL	
25	મહેશનો લાઈનમાં બંને તરફ 11 મી નંબર છે. તો લાઈનમાં કુલ કેટલી વ્યક્તિઓ હશે ?				B
	A	13	B	21	



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	C	22	D	19	
26	1 ઘન મીટર એટલે કેટલા લિટર થાય ?				D
	A	1 લિટર	B	10 લિટર	
	C	100 લિટર	D	1000 લિટર	
27	ગુજરાતના ક્યાં શહેરની બાંધણી સાડી દેશભરમાં પ્રસિદ્ધ છે ?				C
	A	ભાવનગર	B	ભુજ	
	C	જામનગર	D	જુનાગઢ	
28	પ્રખ્યાત વૌઠાની મેળાની જગ્યા પર કેટલી નદીઓનો સંગમ થાય છે ?				B
	A	3	B	7	
	C	5	D	4	
29	તારંગાના જૈન મંદિરો ગુજરાતમાં ક્યાં જીલ્લામાં આવેલ છે ?				D
	A	બનાસકાંઠા	B	પાટણ	
	C	સાબરકાંઠા	D	મહેસાણા	
30	અકીકની નમૂનેદાર વસ્તુઓ કઈ જગ્યાએ બને છે ?				A
	A	ખંભાત	B	અમદાવાદ	
	C	બાલાસિનોર	D	પાટણ	
31	હડપ્પા સંસ્કૃતિનું સૌથી મહત્વનું બંદર કયું હતું ?				D
	A	કાલીબંગન	B	મોહન-જો-દડો	
	C	હડપ્પા	D	લોથલ	
32	હિન્દ સ્વરાજના લેખક કોણ છે ?				D
	A	કાકાસાહેબ કાલેલકર	B	ક. માં. મુન્શી	
	C	સ્વામી આનંદ	D	મહાત્મા ગાંધી	
33	ભગવદગોમંડળ કેટલા ભાગમાં બહાર પાડવામાં આવ્યું છે ?				C
	A	ચાર	B	આઠ	
	C	નવ	D	બાર	
34	મૈત્રક વંશના શાસનમાં ગુજરાતનું પાટનગર કયું હતું ?				D
	A	કર્ણાવતી	B	પાટણ	
	C	સિદ્ધપુર	D	વલભી	
35	સરદાર વલ્લભભાઈ પટેલ ક્યાં શહેરની નગરપાલિકાના પ્રમુખ હતા ?				B
	A	કરમસદ	B	અમદાવાદ	



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	C	બારડોલી	D	વલ્લભ વિદ્યાનગર	
36	The Taq polymerase enzyme is obtained from				A
	A	<i>Thermus aquaticus</i>	B	<i>Thiobacillus ferrooxidans</i>	
	C	<i>Bacillus subtilis</i>	D	<i>Pseudomonas subtilis</i>	
37	Which of the following restriction enzymes produce blunt ends?				C
	A	Hind III	B	Xho	
	C	Eco RV	D	Sal I	
38	Which of the following is not a component of downstream processing?				A
	A	Expression	B	Preservation	
	C	Purification	D	Separation	
39	A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using				C
	A	Taq polymerase	B	Polymerase III	
	C	Ligase	D	Eco RI	
40	DNA fragments separated on an agarose gel can be visualized after staining with _____				A
	A	ethidium bromide	B	bromophenol blue	
	C	acetocarmine	D	aniline blue	
41	A single strand of nucleic acid tagged with a radioactive molecule is called				B
	A	Plasmid	B	Probe	
	C	selectable marker	D	Vector	
42	What is not True for DNA in prokaryotes				D
	A	present in the form of a compact structure called nucleoid	B	the coils are maintained by non-histone basic proteins	
	C	found in cytoplasm in a supercoiled condition	D	packaged as nucleosomes along with histones	
43	Pick the right difference between a DNA and RNA				D
	A	Sugar and phosphate	B	sugar and purines	
	C	purines and phosphate	D	sugar and pyrimidines	
44	Read the statements given below and identify the incorrect statement.				B
	A	The human genome contains 3 billion nucleotide bases.	B	The average gene consists of 30,000 bp	
	C	The total number of genes is estimated around 30,000	D	Less than 2.5% of the genome codes for proteins.	
45	Peptidyl transferase				D
	A	Is a 23s rRNA	B	forms peptide bonds	
	C	component of ribosome	D	all the three	
46	Arrange the following events in the order of synthesis of a protein i) A peptide bond forms ii) A tRNA matches its anticodon to the codon in the A- site				D



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	iii) The movement of second tRNA complex from A-site to P-site iv) The large subunit attaches to the small subunit and the initiator tRNA fits in the P-site v) A small subunit binds to the mRNA vi) The activated amino acid tRNA complex attaches the initiation codon on mRNA		
	A iv, v, iii, ii, i, vi	B iv, vi, v, ii, i, iii	
	C v, iv, iii, ii, vi, i	D v, vi, iv, ii, i, iii	
47	Which of the statements give below is correct with respect to frameshift mutation		D
	A a single nucleotide base change, insertion, or deletion of the genetic material	B Glutamine is replaced by valine	
	C Sickle cell anemia is an example	D insertions or deletions of a number of nucleotides in a DNA sequence that is not divisible by three.	
48	The transcription initiation factor associated with the RNA polymerase holoenzyme in prokaryotes is		C
	A β	B ω	
	C σ	D α	
49	The structural genes of lac operon transcribe mRNA which is		A
	A polycistronic	B replicative	
	C monokaryotic	D monocistronic	
50	Genes which are active all the time synthesizing substances needed by the cell are called		C
	A Cellular luxury genes	B metabolic genes	
	C house keeping genes	D control genes	
51	X - linked recessive gene is		A
	A Always expressed in male	B Always expressed in female	
	C Never expressed in males	D Always expressed in males and female	
52	Which one is an example for chromosomal mutation		D
	A Sickle cell anemia	B Muscular dystrophy	
	C Phenylketoneuria	D Klinefelter's syndrome	
53	Segregation of genes occurs in		C
	A Embryo formation	B Prophase	
	C Anaphase I	D Metaphase II	
54	Which is the false statement?		B
	A Sickle cell anemia is a recessive autosomal disorder	B Phenylketonuria is a recessive allosomal disorder	
	C Haemophilia is a recessive sex-linked disorder	D Colour blindness is a recessive allosome linked disorder	



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55	When two hybrids are crossed, the percentage of recessive is				A
	A	25%	B	100%	
	C	50%	D	75%	
56	Replication of a bacterial chromosome normally starts at a fixed point called:				C
	A	replication fork	B	recognition site	
	C	oriC	D	ter	
57	Bacterial ribosomes typically consist of two subunits, the larger (50 S) subunit consist of:				D
	A	single RNA molecule (16 S) and 21 polypeptides	B	Two RNA molecules (30 S and 50 S) plus 31 different polypeptides	
	C	single RNA molecule (18 S) and 21 polypeptides	D	Two RNA molecules (23 S and 5 S) plus 31 different polypeptides	
58	Which of the following is true for using genome southern blotting?				B
	A	to identify the sequences	B	to identify the number of sequences	
	C	to identify DNA fragments	D	to identify RNA sequence	
59	The bond between the bases and the sugars in DNA referred as				B
	A	hydrogen bond	B	glycosylic bond	
	C	phosphodiester bond	D	covalent linkage	
60	Which of the following is true for Satellite DNA?				D
	A	Occurs mostly near the centromeres of chromosomes	B	may be involved in attachment of the mitotic spindle	
	C	consists of hugenumbers of tandem repeats of short (up to 30 bp) sequences	D	All of the above are correct	
61	The coding regions of genes are interrupted by ----- sequences.				A
	A	intron	B	exon	
	C	chromosomal loops	D	stop codon	
62	SNPs can occur within the short sequences that are recognized by restriction enzymes and thus the length of a fragment generated by cutting a DNA molecule with a restriction enzyme could be different for each allele. This is known as a:				B
	A	polymerase chain reaction (PCR)	B	restriction fragment length polymorphism (RFLP)	
	C	real time PCR	D	variable number tandem repeats (VNTRs)	
63	The major protein components of chromatin referred as:				A
	A	histones	B	RNA primase proteins	
	C	RNA polymerases proteins	D	Transcriptional factors proteins	
64	The introns in the pre-mRNA must be removed to produce continuous				B



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	protein coding sequence in a process known as:		
	A	methylation	B
	C	capping	D
			splicing
			post translation events
65	The single-stranded bubble created in DNA replication is coated with --- -----to protect it from breakage and to prevent the DNA renaturing.		C
	A	DNA helicase	B
	C	single stranded binding protein	D
			DNA polymerase
			primase
66	Which of the following is true for the most important form of DNA damage which produces pyrimidine dimers from adjacent pyrimidine bases?		B
	A	X ray	B
	C	5 bromo uracil	D
			UV light
			Acridine orange
67	The mismatched base is removed from the daughter strand of DNA by:		D
	A	DNA photolyases	B
	C	exonuclease	D
			Alkyltransferase
			excision repair mechanism
68	Cosmids have a capacity for cloned DNA of:		A
	A	30-45 kb	B
	C	more than 50 kb	D
			10 kb
			20 kb
69	The RNA hairpin is often followed by a sequence of four or more ----- residues		B
	A	A	B
	C	C	D
			U
			G
70	The trp operon encodes -----structural genes involved in tryptophan biosynthesis.		B
	A	three	B
	C	six	D
			five
			four
71	In the initiation step of translation: The 30S subunit attaches to an mRNA molecule making use of the ribosomebindingsite (RBS) on the:		B
	A	ribosome	B
	C	tRNA	D
			mRNA
			50S subunit
72	-----are genes whose overactivity causes cells to become cancerous.		B
	A	Tumor suppressor genes	B
	C	silent genes	D
			Oncogenes
			structural genes
73	A short region of a vector containing a number of unique restriction sites into which DNA can be introduced is termed as:		A
	A	Multiple cloning site	B
	C	origin of replication	D
			Open reading frame
			linker
74	If a mutation is complemented by a clone of a different gene whose product is being overproduced, this is called:		B
	A	transacting mutation	B
	C	silent mutation	D
			multicopy suppression
			complementation



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75	RNA-directed RNA polymerase, used in replication of some RNA viruses termed as:				B
	A	RNaseH	B	replicase	
	C	TrpR	D	resolvase	
76	Which of the following techniques can not be used to determine the molecular weight of a protein?				A
	A	UV adsorption	B	viscosity	
	C	light scattering	D	sedimentation equilibrium	
77	Routinely used glucose biosensor estimates blood glucose level by sensing the concentration of				B
	A	glucose	B	oxygen	
	C	carbon dioxide	D	hydrogen peroxide	
78	Which of the following gas is the important cause of ozone depletion produced during denitrification process?				B
	A	NH ₃	B	N ₂ O	
	C	Dinitrogen	D	NH ₂ O	
79	A lichen is formed by mutualism between an algae and _____.				B
	A	Diatom	B	Fungus	
	C	Phytoplankton	D	Cyanobacteria	
80	Which of the following pathway degrades aliphatic hydrocarbons?				C
	A	Glycolysis	B	TCA	
	C	β-oxidation	D	Catechol	
81	In which law Molar extinction coefficient is used?				A
	A	Beer-Lambert law	B	Boyle's Law	
	C	Avogadro's Law	D	Faraday's Law	
82	In waste water treatment process, which one is not the process of disinfection?				D
	A	Chlorination	B	UV irradiation	
	C	Ozonation	D	Oxidation	
83	Who provides oxygen in oxidation ponds, used for treatment of organic waste?				C
	A	Protozoa	B	Fungi	
	C	Algae	D	Hydrogen Peroxide	
84	Ion exchange chromatography separates proteins differing in _____.				A
	A	Surface charge	B	Cationic amino acids	
	C	Anionic amino acids	D	Solubility	
85	Which type of antibodies of mother, provides passive immunity to her baby before the birth and after the birth respectively?				A
	A	IgG and IgA	B	IgG and IgM	
	C	IgA and IgD	D	IgA and IgM	
86	In which of the following, the loss of activity can be restored by the				A



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	removal of inhibitor?				
	A	Reversible inhibition	B	Irreversible inhibition	
	C	Competitive inhibition	D	Mixed inhibition	
87	Which of the following is a growth regulator involved in abscission, dormancy, and inhibition of seed germination?				C
	A	IAA	B	Gibberellic acid	
	C	Abscisic acid	D	IPTG	
88	cDNA is synthesized using (A) (B) (C) (D)				B
	A	Alkaline phosphatase	B	Reverse transcriptase	
	C	Terminal transferase	D	DNA ligase	
89	Agar is extracted from red sea weed using _____				C
	A	Lipid extraction	B	Hexane extraction	
	C	Water extraction	D	Evaporation	
90	Chemical used to arrest spindle fiber formation is _____ .				B
	A	Ethidium bromide	B	Colchicine	
	C	NaOH	D	Tetracyclin	
91	Chromatography with solid stationary phase is called as _____				B
	A	Solid chromatography	B	Adsorption chromatography	
	C	Liquid chromatography	D	Partition chromatography	
92	Which amino acid is coded only by a single triplet code?				D
	A	Alanine	B	Arginine	
	C	Formyl Methionine	D	Tryptophan	
93	Luciferase enzyme is isolated from				D
	A	Seaweed	B	Squid	
	C	Aequorea victoria	D	Vibrio fischeri	
94	Technique used to find out structure of protein				A
	A	Crystallography	B	SDS PAGE	
	C	Chromatography	D	MALDI	
95	Technique used for knockout of gene from genome				B
	A	RNA interference	B	Crispr/cas 9	
	C	RE digestion	D	All of the above	
96	Phylogenetic relationship can be represented by				C
	A	Data retrieving tool	B	Gene Bank	
	C	Dendrogram	D	Data search tool	
97	Which among the following is not a chemical database?				D
	A	PubChem	B	ChEMBL	
	C	ZINC	D	PDB	
98	GeneBank and DDBJ are example of				A
	A	Primary database	B	Secondary database	
	C	Composite database	D	Tertiary database	
99	Where does the Fluorescence in situ hybridization (FISH) probe localize to?				C



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	A	Golgi Apparatus	B	Cell Membrane	
	C	Nucleus	D	Cytoplasm	
100	According to standard amino acid code letters which of the given pair is not right?				B
	A	Q- glutamine	B	R- serine	
	C	K- lysine	D	Y- tyrosine	