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Set	No.	1

18P/292/25

3607

otal No. of Printed Pages : 28	Question Booklet No
(To be filled up by the	he candidate by blue/black ball-point pen)
Roll No.	
Roll No. (Write the digits in words)	(2018)
Serial No. of OMR Answer Sheet	( )
Centre Code No.	
Day and Date	(Signature of Invigilator)

#### INSTRUCTIONS TO CANDIDATES

(Use only blue/black ball-point pen in the space above and on both sides of the OMR Answer Sheet)

- Within 30 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that
  it contains all the pages in correct sequence and that it page/question is missing. In case of faulty
  Question Booklet bring it to the notice of the Superint Indent/Invigilators immediately to obtain a
  fresh Question Booklet.
- 2. Do not bring any loose paper, written or blank, inside the Examination Hall except the Admit Card.
- A separate OMR Answer Sheet is given. It should not be folded o mutilated. A second OMR Answer Sheet shall not be provided. Only the OMR Answer Sheet will be evaluated.
- 4. Write all the entries by blue/black ball pen in the space provided above.
- 5. On the front page of the OMR Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, write the Question Booklet Number, Centre Code Number and the Set Number (wherever applicable) in appropriate places.
- 6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR Answer Sheet and also Roll No. and OMR Answer Sheet Serial No. on the Question Booklet.
- Any change in the aforesaid entries is to be verified by the Invigilator, otherwise it will be taken as unfair means.
- 8. Each question in this Booklet is followed by four alternative answers. For each question, you are to record the correct option on the OMR Answer Sheet by darkening the appropriate circle in the corresponding row of the OMR Answer Sheet, by ball-point pen as mentioned in the guidelines given on the first page of the OMR Answer Sheet.
- For each question, darken only one circle on the OMR Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
- 10. Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero mark).
- For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
- 12. On completion of the Test, the Candidate must handover the OMR Answer Sheet to the Invigilator in the examination room/hall. However, candidates are allowed to take away Text Booklet and copy of OMR Answer Sheet with them.
- 13. Candidates are not permitted to leave the Examination Hall until the end of the Test.
- 14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

उपर्यंक निर्देश हिन्दी में अन्तिम आवरण-पृष्ठ पर दिये गए हैं।



#### SPACE FOR ROUGH WORK

रफ़ कार्य के लिए जगह



#### No. of Questions: 120

Full Marks: 360

Note:

- (1) Attempt as many questions as you can. Each question carries 3 marks.
  One mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.
- (2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.
- The Mathematics of exponential growth in micro-organisms can be expressed
  as
  - (1)  $\log N_o = n \log 2 + \log N$
- (2)  $n \log 2 = \log N + \log N_o$

(3)  $\log N = 2 \log N_o$ 

- (4)  $\log N = \log N_o + n \log 2$
- 2. Malolactic fermentation is carried out during the production of
  - (1) Beer
- (2) Wine
- (3) Biofuels
- (4) Cheese

51) (P.T.O.)



3.	Cyanotoxins are produced by	
	(1) Green algae	(2) Blue-green algae
	(3) Red algae	(4) Yellow-green algae
4.	In a scheme of classification, genetic	ally related groups represent a
	(1) Clone (2) Clade	(3) Kingdom (4) Domain
_		
5.	Which one of the following is not for	and in phytoplasma cell membrane?
	(1) Proteins (2) Lipids	(3) Sterols (4) Fatty acids
6.	Clinically useful aminoglycosides inc	ludes
	(1) Penicillin	(2) Cephalosporin
	(3) Streptomycin	(4) Erythromycin
7.	Dipicoline acid is formed mainly in structures?	n which one of the following bacterial
	(1) Flagella (2) Sex pilus	(3) Capsule (4) Endospore
8.	E. coli genomic DNA has approximate	ly how many base pairs?
	(1) 4·5 Mb (2) 1·8 Mb	(3) 2·1 Mb (4) 8·5 Mb



9.	Vaccination was developed by	
	(1) Stanley Prusiner	(2) Edward Jenner
	(3) Paul Ehrlich	(4) Robert Koch
10.	Genomic concatemeric DNA is fo	ormed during the replication of
	(1) Bacteriophage	(2) Bacteria
	(3) Yeast	(4) Plant virus
11.	Bacteroids surrounded by a plant as	cytoplasmic membrane form structures called
	(1) Infection thread	(2) Symbiosome
	(3) Nod factors	(4) Root nodules
12.	Which one of the following has I nitrogen?	been used to enrich rice paddies with fixed
	(1) Azolla	(2) Rhizobium
	(3) Streptomyces	(4) Agrobacterium
13.	The cos sites of bacteriophage lamb	bda is made up of how many nucleotides?
	(1) 8 (2) 12	(3) 16 (4) 20
14.	Which one of the following is not	t a mutagen?
	(1) Ethidium bromide	(2) X-ray
	(3) Transposons	(4) Salicylic acid
(61)		3 (P.T.O.)



15.	The lac repressor functions as a		
	(1) Monomer (2) Dimer	(3) Trimer (4)	Tetramer
16.	A oxygenic phototroph, prochloroph	yte, contains	
	(1) Phycobilins and chlorophyll $\underline{b}$		
	(2) Chlorophylls a and b, and no p	hycobilins	
	(3) Phycobilins and chlorophylls a	and <u>b</u>	
	(4) Phycobilins and no chlorophylls		
17.	Which one of the following is a Mo	Fe protein?	
	(1) Dinitrogenase	(2) Dinitrogenase red	uctase
	(3) 1,3-β-glucanase	(4) DNA polymerase	
18.	Taking up DNA by transformation is is due to the presence of	an inherited property o	f a bacterium. This
	(1) Com protein genes	(2) Nif genes	
	(3) Trp operon	(4) siRNA	
19.	A mutant with a growth requireme	nt for a specific nutrier	nt is known as
	(1) Autotroph (2) Auxotroph	(3) Heterotroph (4)	Phototroph
<b>61</b> )	4	•	



20.	Some of the metabolic plasmids of bacteria carry genes for enzymes that direct		
	(1) The formation of sex pili		
	(2) Destruction and modification of antibiotics		
	(3) Degradation of aromatic compounds		
	(4) Killing of other bacteria		
21.	Chemoautotrophic bacteria derive energy for their physiological needs by		
	(1) Oxidizing organic compounds (2) Reducing N <sub>2</sub>		
	(3) Absorbing solar energy (4) Oxidizing inorganic chemicals		
22.	'Red-rust of tea' disease is caused by a member of		
	(1) Algae (2) Bacteria (3) Plant viruses (4) Fungi		
23	The term cistron was given by		
20.			
	(1) Muller (2) Sutton (3) Benzer (4) Nirenberg		
24.	The famous microbiologist, who disapproved the theory of spontaneous generation was		
	(1) Carl Woese (2) Martin Beijerinck		
	(3) Louis Pasteur (4) Stanley Miller		
(61)	5 (P.T.O.)		



(1) Chemoautotrophic (2) Photoheterotrophic (3) Chemoorganotrophic (4) Auxotrophic  26. Select the mismatch: (1) Phycoerythrin pigment — Non-photosynthetic (2) Heterocyst — Anaerobic cell (3) Bacterial endospores — Heat resistant cells (4) Ammonium nitrogen — Electron donor  27. The association and dissociation of ribosomal subunits are dependent on the concentrations of (1) Mg ions (2) Ca ions (3) Na ions (4) Mn ions  28. If a bacterial cell divides in every 20 minutes, how many bacterial cells will be formed in two hours? (1) 16 (2) 24 (3) 64 (4) 32  29. The main biological function of naturally occurring bacteria associated with the gold and copper mines is (1) To oxidize reduced sulfur and form H <sub>2</sub> SO <sub>4</sub> (2) To convert ammonia to nitrate (3) To oxidize Fe <sup>+2</sup> to Fe <sup>+3</sup> (4) To fix N <sub>2</sub>	25.	The mode of nut	rition of methano	genic bacteria is	
<ul> <li>26. Select the mismatch: <ol> <li>Phycoerythrin pigment — Non-photosynthetic</li> <li>Heterocyst — Anaerobic cell</li> <li>Bacterial endospores — Heat resistant cells</li> <li>Ammonium nitrogen — Electron donor</li> </ol> </li> <li>27. The association and dissociation of ribosomal subunits are dependent on the concentrations of <ol> <li>Mg ions</li> <li>Ca ions</li> <li>Na ions</li> <li>Mn ions</li> </ol> </li> <li>28. If a bacterial cell divides in every 20 minutes, how many bacterial cells will be formed in two hours? <ol> <li>16</li> <li>24</li> <li>36</li> <li>43</li> </ol> </li> <li>29. The main biological function of naturally occurring bacteria associated with the gold and copper mines is <ol> <li>To oxidize reduced sulfur and form H<sub>2</sub>SO<sub>4</sub></li> <li>To convert ammonia to nitrate</li> <li>To oxidize Fe<sup>+2</sup> to Fe<sup>+3</sup></li> <li>To fix N<sub>2</sub></li> </ol> </li> </ul>		(1) Chemoautotr	ophic	(2) Photohete	rotrophic
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(3) To oxidize Fe <sup>+2</sup> to Fe <sup>+3</sup> (4) To fix N <sub>2</sub>		(1) To oxidize re-	duced sulfur and	form H <sub>2</sub> SO <sub>4</sub>	
(4) To fix N <sub>2</sub>		(2) To convert an	mmonia to nitrate		
		(3) To oxidize Fe	+2 to Fe+3		
<b>51</b> )		(4) To fix N <sub>2</sub>			
	<b>51</b> )			6	



30.	When an old bag	cterial culture is t	ransf	ferred to fresh basal medium, the la
	(1) Prolonged		(2)	Absent
	(3) Reduced		(4)	Without any change
31.	When mutation o base, it is called	ccurs due to the su as	ıbstit	ution of a pyrimidine base by a purine
	(1) Transition		(2)	Transgenic
	(3) Transformatio	n	(4)	Transversion
32.	The 'Super Bug', a caused by	transgenic bacteri	al str	rain, was created to clean the pollution
	(1) Pesticides		(2)	Eutrophication
	(3) Heavy metals		(4)	Petroleum hydrocarbons
33.	equivalents (with	the production of	4 red	required for the use of 4 positive lucing equivalents), necessary for the o molecules of H <sub>2</sub> O?
	(1) 8	(2) 12	(3)	6 (4) 4
34.	The entire netwo	ork of cell cytopl referred as	lasm	of plant cells, interconnected by
	(1) Apoplast		(2)	Spheroplast
	(3) Symplast		(4)	Protoplast
(61)		7		(P.T.O.)



(61)

35. Which of the following is primary transporter?		
	(1) Antiporter	(2) Symporter
	(3) Uniporter	(4) ABC transporters
36.	Cyanobacteria differ from purple an	nd green phototrophic bacteria because they
	(1) Show oxygenic photosynthesis	
	(2) Use H2S as an electron donor	
	(3) Have a membrane-enclosed nu	ucleus
	(4) Do not require light	
37.	Which of the following is not a si	nk in the plants?
	(1) Flower bud	
	(2) Developing fruit	
	(3) Photosynthetically active leaf	
	(4) A storage organ of the plant	
38.	Zygotene is characterised by	
	(1) Synapsis, crossing-over, tetrac	d formation
	(2) Synapsis, bivalents, crossing-	over
	(3) Recombination nodules, synap	psis and bivalents
	(4) Bivalents, synapsis, tetrad for	mation

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39.	Which of the follow	ving is arginine i	rich?			
	(1) H1	(2) H2A	(3)	H2B	(4)	НЗ
40.	Cell cycle is regula	ted by the maste	er co	ntrol molecules	kn	own as
	(1) Transferases		(2)	Lipases		
	(3) Kinases		(4)	Dehydrogenas	es	
41.	Which of the follow	ving is a microfil	amer	it?		
	(1) Keratin	(2) Actin	(3)	Desmin	(4)	Tubulin
42.	Which of the follow	ving is hemizygo	us?			
	(1) Male mice		(2)	Male Drosophi	la	
	(3) Female Drosoph	hila	(4)	Male plant of	Mel	andrium
43.	Which of the following evolution'?	ng combinations	is tru	ie as proponent	s of	'synthetic theory of
	(1) T. Dobzhansky	, R. A. Fisher, L	amar	ck, J. B. S. Ha	ldar	ne, Ernst Mayr
	(2) T. Dobzhansky	, R. A. Fisher, D	arwii	n, J. B. S. Halo	lane	e, Ernst Mayr
	(3) T. Dobzhansky,	R. A. Fisher, Hug	go de	Vries, J. B. S. H	Iald	ane, Ernst Mayr
	(4) T. Dobzhansky, G. L. Stabbins	R. A. Fisher, J.	B. S.	. Haldane, Erns	t M	ayr, Sewall Wright,
44.	'Linkage map' is a	lso referred to a	S			
	(1) Chromosome n	nap	(2)	Physical map		
	(3) Restriction may	р	(4)	Ganetic map		
61)		Ġ	9			(P.T.O.)



45.	In glycolysis fructose by the enzyme	e-6-phosphate is	trai	nsformed to fru	ictos	se 1,6-diphosphat
	(1) Hexokinase		(2)	Phosphohexois	some	erase
	(3) Phosphofructoki	nase	(4)	Phosphotriosc	ison	merase
46.	Chitin is a					
	(1) Polypeptide		(2)	Polysaccharide	9	
	(3) Polyphosphate		(4)	Lipid		
47.	Which of the following	ing enzyme is re	spor	sible for DNA	chai	in elongation?
	(1) DNA polymerase	: I	(2)	DNA polymera	ise I	I
	(3) DNA polymerase	: III	(4)	RNA polymera	se	
48.	Agarose-gel electrop	horesis is used	for s	eparating		
	(1) Proteins		(2)	Nucleic acids		
	(3) Lipids		(4)	Carbohydrates	\$	
49.	Which of the follow through splitting of	ing element is r water by changi	respo	onsible for evol ts oxidation sta	ving ates:	oxygen in plant
	(1) Fe (2	2) Mg	(3)	Mn	(4)	Cu
50.	Psammophytes grow	on				
	(1) Stone (2	2) Saline land	(3)	Sand	(4)	Marshy lands
51)		10				



51.	'Stone leprosy' is caused by	
	(1) Mycobacterium leprae	(2) Lightening
	(3) Acid rain	(4) Dust on sand
52.	The site of glycosidation of lipids glycoproteins in the cell is	and proteins to produce glycolipids and
	(1) Mitochondria	(2) Chloroplast
	(3) Golgi complex	(4) Lysosomes
53.	One gene-one enzyme hypothesis	was given by
	(1) Beadle and Tatum	(2) Jacob and Monad
	(3) Watson and Crick	(4) Luria and Delbrick
54.	Clathrin coated vesicles are meant	for
	(1) Extracellular traffic	(2) Intracellular traffic
	(3) Coating vacuole	(4) Protein synthesis
55.	Which one of the following are terr	ninator codons?
	(1) UAA, UAG, UGA	(2) AUG, UAG, UGA
	(3) UAC, AUG, UAG	(4) AUG, ACG, GAG



(P.T.O.)

56.	6. The starting tRNA of prokaryotes is loaded with								
	(1) Valine (2) Methionine								
	(3) Tryptophan (4) Formylated methionine								
57.	7. Which of the following contains hydrolytic enzymes?								
	(1) Dictyosomes (2) Peroxisomes (3) Lysosomes (4) Carbox	rysomes							
58.	11.7								
	(1) The substrate concentration at which all of the enzyme molecules are forming ES complex								
	(2) The substrate concentration at which <sup>3</sup> / <sub>4</sub> of the enzyme molecules ES complex								
	(3) The substrate concentration at which ½ of the enzyme molecules ES complex	are forming							
	(4) The substrate concentration at which \(\frac{1}{3}\) of the enzyme molecules ES complex	are forming							
59.	<ol> <li>The study of genetic material recovered directly from environmental known as</li> </ol>	l samples is							
	(1) Metagenomics (2) Proteomics								
	(3) Genomics (4) Metabolomics								
60.	60. MAB stands for								
	(1) Man and Biology (2) Man and Biosphere Prog	gramme							
	(3) Map and Biology (4) Management and Biosph	nere							
(61)	1)								



61.	Но	w many CO <sub>2</sub> r	nole	cules exit from	citr	ric acid cycle?		
	(1)	One	(2)	Two	(3)	Three	(4)	Four
62.		nich one of the ayed hypersen			glob	ulins is associa	ated	with anaphylactic
	(1)	IgE	(2)	IgA	(3)	IgG	(4)	IgM
63.	Ар	opulation of in	divid	uals of species,	hav	ing genetic diffe	ereno	ces is referred as
	(1)	Ecotype	(2)	Ecad	(3)	Ecotone	(4)	Biotype
64.	750	ich one of the Nitrogen	follo	owing gases is		robiocidal in na Ethylene oxide		e?
	775.3	Hydrogen				Oxygen		
65.	Edi			And the second s	0.000		n of	a protein because
	(1)	Modifies and	cleav	es only N-term	inal	amino acid re	sidu	ie
	(2)	Modifies and	cleav	es only C-term	inal	amino acid re	sidu	ie
	(3)	Cleaves N-terr	nina	l amino acid re	esidi	ue in native for	m	
	(4)	Cleaves C-terr	nina	l amino acid re	sid	ue in native for	rm	
51)				13				(P.T.O.)



66.	. In a dipeptide, peptide bond is generated between									
	(1) $\alpha$ -COOH of 1st and $\alpha$ -NH2 of 2r	nd amino acid								
	(2) $\alpha$ -NH2 of 1st and $\alpha$ -COOH of 2r	nd amino acid								
	(3) $\beta/\gamma$ -NH2 of 1st and $\beta/\gamma$ -COOH o	f 2nd amino acid								
	(4) $\alpha$ -C of 1st and $\alpha$ -C of 2nd amino acid									
67.	Which one of the following stabilizes	s α-helix structure of a protein?								
	(1) Peptide bonds	(2) Disulphide bonds								
	(3) Ionic bonds	(4) Hydrogen bonds								
68.	Exposure of a native protein to hear protein due to breaking of	t results into partial denaturation of the								
	(1) Disulphide bonds	(2) Hydrophobic interaction								
	(3) Hydrogen bonds	(4) Peptide bonds								
69.	Enzymes, which do not follow norm cooperativity are	al Michaelis-Menten kinetics and exhibit								
	(1) Isoenzymes	(2) Coenzymes								
	(3) Allosteric enzymes	(4) Abzymes								
70.	Lactate dehydrogenase belongs to w	hich major class of the enzymes?								
	(1) Ligases	(2) Transferases								
	(3) Oxido-reductases	(4) Isomerases								
(61)	14									



Identify an aldose from the options	given below	
(1) Dihydroxy acetone	(2) Glyceraldehyde	
(3) Xylulose	(4) Ribulose	
Which one of the following pairs rep	presents an isomer to each other	?
(1) D-glucose and L-glucose	(2) α-D-glucose and β-D-glucose	е
(3) D-glucose and D-mannose	(4) D-glucose and D-fructose	
Identify the glycolytic enzyme which synthesis	h is associated with substrate le	evel ATP
(1) Phosphofructokinase	(2) Hexokinase	
(3) Pyruvate kinase	(4) Aldolase	
Identify a decarboxylase out of the T	TCA cycle enzymes given below	
(1) Isocitrate dehydrogenase	(2) Succinate dehydrogenase	
(3) Fumerase	(4) Malate dehydrogenase	
The 'Fo' domain of the mitochondria represents	al Fo-F1 complex is named so be	ecause it
(1) The protein fragment given no n	number	
(2) The protein fragment that does	not perform catalytic function	
(3) Cofactor binding domain		
(4) Domain that confers oligomycin	sensitivity to the complex	
15	5	(P.T.O.)
	(1) Dihydroxy acetone (3) Xylulose  Which one of the following pairs rep (1) D-glucose and L-glucose (3) D-glucose and D-mannose  Identify the glycolytic enzyme which synthesis (1) Phosphofructokinase (3) Pyruvate kinase  Identify a decarboxylase out of the following and the following decarboxylase out of the following fragment given no represents (1) The protein fragment given no re (2) The protein fragment that does (3) Cofactor binding domain (4) Domain that confers oligomycin	(3) Xylulose  Which one of the following pairs represents an isomer to each other  (1) D-glucose and L-glucose (2) α-D-glucose and β-D-glucose (3) D-glucose and D-mannose  (4) D-glucose and D-fructose  Identify the glycolytic enzyme which is associated with substrate lesynthesis  (1) Phosphofructokinase (2) Hexokinase (3) Pyruvate kinase  (4) Aldolase  Identify a decarboxylase out of the TCA cycle enzymes given below (1) Isocitrate dehydrogenase (3) Fumerase (4) Malate dehydrogenase  The Fo' domain of the mitochondrial Fo-F1 complex is named so be represents (1) The protein fragment given no number (2) The protein fragment that does not perform catalytic function



Which one of the following enzymes	synthesize a cell signaling factor?
(1) Cyclooxygenase	(2) Cytochrome oxidase
(3) Cytochrome-Q-reductase	(4) Co-A reductase
The protein part of an enzyme, verifunctions, is known as	which utilizes cofactors for its catalytic
(1) Apoenzyme	(2) Coenzyme
(3) Holoenzyme	(4) Native enzyme
Which one of the following is an ar	nphoteric molecule?
(1) α-Glycine (2) Triglyceride	(3) Sucrose (4) Phospholipid
Out of the following lipids, which one	contains maximum number of fatty acids?
(1) Cholesterol	(2) Biological wax
(3) Prostaglandin	(4) Triglyceride
In a nucleotide structure, phosphat	e is attached to the ribose sugar by a
(1) Phosphoester bond	(2) Phosphodiester bond
(3) Glycoside	(4) Peptide
2'-deoxy-cytidine is a	
(1) Nucleotide	(2) Di-nucleotide
(3) Modified base	(4) Nucleoside
16	5
	<ul> <li>(1) Cyclooxygenase</li> <li>(3) Cytochrome-Q-reductase</li> <li>The protein part of an enzyme, of functions, is known as</li> <li>(1) Apoenzyme</li> <li>(3) Holoenzyme</li> <li>(4) Which one of the following is an antique of the following lipids, which one</li> <li>(1) α-Glycine (2) Triglyceride</li> <li>(2) Out of the following lipids, which one</li> <li>(3) Prostaglandin</li> <li>(4) Phosphoester bond</li> <li>(5) Glycoside</li> <li>(6) Cholesterol</li> <li>(7) Phosphoester bond</li> <li>(8) Glycoside</li> <li>(9) Cholesterol</li> <li>(1) Phosphoester bond</li> <li>(2) Glycoside</li> <li>(3) Glycoside</li> <li>(4) Nucleotide</li> </ul>



82.	Which one of the following RNAs as	ssume tertiary structure for its functions?
	(1) Hn-RNA (2) mRNA	(3) tRNA (4) 5S rRNA
83.	During prokaryotic DNA synthesis	s, RNA primers at lagging strand are removed
	(1) S1 nuclease	(2) DNA polymerase I
	(3) DNA polymerase III	(4) RNase II
84.	Which analytical tool was used by serves as hereditary material and	Hershey and Chase to demonstrate that DNA not the proteins?
	(1) Radiotracer technique	
	(2) X-ray diffraction analysis	
	(3) Spectrometry	
	(4) Density gradient centrifugation	n
85.	The polymerase that synthesize independent manner is	es a polynucleotide chain in a template
	(1) DNA Pol-I	(2) DNA Pol-III
	(3) RNA polymerase	(4) Poly-a polymerase
86.	Discovery of ribozymes associates	with
	(1) RNA splicing	(2) Transcriptional silencing
	(3) Translational silencing	(4) DNA ligase activity
(61)		17 (P.T.O.)



87.	Identify the factor that terminates prokaryotic translation								
	(1) 1F2-GTP	(2) 1F2	(3)	RF1	(4)	RG3			
88.	In a charged tRN	IA, amino acid	is linked	at					
	(1) 3'-end								
	(2) 5'-end								
	(3) D-loop								
	(4) Adjacent to a	inti-codon sequ	iences						
89.	<ul> <li>A human recombinant gene can be successfully translated in E. coli. Thi because</li> </ul>								
	(1) Genetic code	is universal							
	(2) Genetic code	is degenerate	type						
	(3) E. coli and hi	uman have sim	ilar trans	slational fa	ctors				
	(4) E. coli and hi	ıman have sim	ilar ribos	somal organ	nization				
90.	Which one is us	ed as a genetic	vector?						
	(1) λ-Phage DNA		(2)	Retroviral	RNA				
	(3) Retrovial cDI	NA	(4)	RNA prim	er				
(61)			18						



<b>Q</b> 1	In a P700 reaction centre of chlorophyll, 700 denotes for									
<b>71</b> .	(1) Light wavelength									
	(1) Light wavelength									
	(2) Number of reaction centres									
	(3) Potential of the photosystem									
	(4) Number of water molecule split									
92.	During photosynthetic dark reaction, the inorganic C is fixed with									
	(1) Ribulose 2,5-bisphosphate (2) Ribose 2,5-bisphosphate									
	(3) Ribulose 1,5-bisphosphate (4) Ribose 1,5-bisphosphate									
93.	Identify the Cu containing photosynthetic pigment									
	(1) Chlorophyll (2) Plastocyanin									
	(3) Thioredoxin									
94.	In eukaryotes, the first transcript synthesized by RNA polymerase II is referred as									
	(1) mRNA (2) sn-RNA (3) Hn-RNA (4) t-RNA									
95	. The conformation of 2'-deoxy-ribose in a DNA double strand is									
	(1) Chair type (2) Boat type									
	(3) Furanose ring type (4) Puckered type									
(61)	19 (P.T.O.)									



96.	Titration of a completely protonated solution of $\alpha$ -arginine against a base would produce pK values of							
	(1) One	(2)	Two	(3)	Three	(4) Four		
97.	Maximum numbe	r of	electrons in a	sub	shell with $l = 3$	and $n = 4$ is		
	(1) 10	(2)	12	(3)	14	(4) 16		
98.	Mg <sup>2+</sup> is isoelectro	nic	with					
	(1) Ca <sup>2+</sup>	(2)	Na <sup>+</sup>	(3)	$Zn^{2+}$	(4) Cu <sup>2+</sup>		
99.	How many stereo	ison	ners of 3-bromo	-2-b	outanol CH <sub>3</sub> CH	I(OH) CHBrCH <sub>3</sub> exist?		
	(1) 2	(2)	4	(3)	3	(4) 1		
100.	The isomers which	cai	n be interconver	ted	through rotation	n around a single bond		
	(1) Conformers			(2)	Diastereomers			
	(3) Enantiomers			(4)	Positional ison	ners		
01.	Standard enthalpy burnt in excess o		ange of combus	stior	occurs when	1 mol of substance is		
	(1) Nitrogen			(2)	Oxygen			
	(3) Carbon dioxid	е		(4)	Helium			
61)			20					



102.	CH <sub>3</sub> CHO and C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> CHO can be distinguished chemically by								
	(1) Tollen's reager	nt test	(2) Fehling solu	ition test					
	(3) Benedict test		(4) Iodoform tes	st					
103.	The enzyme, tyros		•						
	(1) iron	(2) copper	(3) zinc	(4) potassium					
104.	In hemoglobin, th	e transition from	T state to R state	e is triggered by					
	(1) Fe <sup>2+</sup> binding		(2) Heme binding						
	(3) Oxygen bindin	ng	(4) Subunit ass	(4) Subunit association					
105.	Ethylene glycol re	acts with dimethy	yl terephthalate to form						
	(1) Nylon-6·6	(2) Teflon	(3) Orlon	(4) Dacron					
106.	The number of asy	mmetric carbon a	toms in the α-D-glu	acopyranose molecule is					
	(1) 2	(2) 3	(3) 4	(4) 5					
107.	Which is a disacc	haride?							
	(1) Glucose	(2) Maltose	(3) Fructose	(4) Cellulose					
61)		2	21	(P.T.O.)					



Which of hydrogens a-d in the following molecule gives a triplet signal in a normal 1HNMR spectrum?

$$\begin{array}{c} O \\ \parallel \\ CH_3-C-CH_2CH(OCH_3)_2 \\ \uparrow \\ a \end{array}$$

- (1) Hydrogen a
- (2) Hydrogen b
- (3) Hydrogen c (4) Hydrogen d

Which one of the following set of quantum numbers represents highest energy? 109.

- (1) n=2, l=1 (2) n=3, l=2 (3) n=3, l=1 (4) n=2, l=0

Strength of hydrogen bond is intermediate between 110.

- (1) van der Waal and covalent
- (2) ionic and covalent

(3) ionic and metallic

(4) metallic and covalent

For a reaction to be spontaneous, the following is essential to be negative 111.

- (1)  $\Delta H T\Delta S$
- (2)  $\Delta H + T\Delta S$
- (3) ΔH
- (4) AS

When ice melts into water, entropy

(1) becomes zero

(2) decreases

(3) increases

(4) remains same

The value of free energy change at equilibrium is

- (1) positive
- (2) negative
- (3) zero

22

(4) not definite

(61)



114.	Which one of the following is not a hard base?								
	(1) NH <sub>3</sub>	(2) H <sub>2</sub> O	(3)	Cl-		(4	4)	CN-	
115.	Hg <sup>2-</sup> is classified	as							
	(1) soft acid	(2) hard acid	(3)	soft	base	(4	4)	hard bas	e
116.	Winkler method is	s used to determin	ie						
	(1) Dissolved Oxy	gen (DO)							
	(2) Biochemical C	xygen Demand (B	OD)						
	(3) Organic Carbo	on (OC)							
	(4) Elemental Car	bon (EC)							
117.	The smog is gene	rally caused by the	e pr	esenc	e of				
	(1) $O_2$ and $O_3$		(2)	NOX	and S	$o_x$			
	(3) $O_2$ and $N_2$		(4)	O <sub>3</sub> a	and N <sub>2</sub>				
118.	The prefixes Z an	d E stand for							
	(1) Zeigler-Erhard		(2)	Zwit	ter-Ery	thro			
	(3) Zirco-Estrogen		(4)	Zus	ammen	-Ente	gg	en	
(61)		23							(P.T.O.)



119. Bakelite is a cross-linked polymer of

(1) Phenol

- (2) Formaldehyde
- (3) Both phenol and formaldehyde
- (4) Wool

120.  $\alpha$ -D-glucose and  $\beta$ -D-glucose are

(1) anomeric sugar

(2) epimeric sugar

(3) position isomers

(4) functional isomers

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#### रफ़ काय क लिए जगह



#### अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा ओ॰एम॰आर॰ उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली/काली बाल-प्वाइंट पेन से ही लिखें)

- प्रश्न-पुस्तिका मिलने के 30 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई पृष्ठ या प्रः छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूस पुस्तिका प्राप्त कर लें।
- परीक्षा भवन में प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
- ओ॰एम॰आर॰ उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा ओ॰एम॰आर॰ उत्तर पत्र नहीं दिया जायेगा। केवल ओ॰एम॰आर॰ उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
- 4. नर्भा प्रविष्टियां प्रथम आवरण-पृष्ठ पर नीली/काली बाल पेन से निर्धारित स्थान पर लिखें।
- 5. ओ॰एम॰आर॰ उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत् को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक एवं केन्द्र कोड नम्बर तथा सेट का नम्ब उचित स्थानों पर लिखें।
- 6. ओ॰एम॰आर॰ उत्तर-पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न पुस्तिका पर अनुक्रमांक सं॰ और ओ॰एम॰आर॰ उत्तर-पत्र सं॰ की प्रविष्टियों में उपरिलेखन की अनुमित नहीं है
- उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित मध्य का प्रयोग माना जायेगा।
- 8. प्रश्न-पुम्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपक ओ०एम०आर० उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को ओ०एम०आर० उत्तर-पत्र के प्रथम पृ पर दिये गये निर्देशों के अनुसार पेन से गाड़ा करना है।
- प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाड़ा करने पर अधः
  एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
- 10. ध्यान दें कि एक बार स्वाही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाह हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
- 11. रफ़ कार्य के लिये प्रश्न-पुस्तिका के मुखपृष्ठ के अन्दर वाले पृष्ठ तथा अंतिम पृष्ठ का प्रयोग करें।
- 12. परीक्षा की समाप्ति के बाद अभ्यर्थी अपना ओ॰एम॰आर॰ उत्तर-पत्र परीक्षा कक्ष/हाल में कक्ष निरीक्षक को सींप दें। अभ्यः अपने साथ प्रश्न-पुस्तिका तथा ओ॰एम॰आर॰ उत्तर-पत्र की प्रति ले जा सकते हैं।
- 13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
- यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की. भार होगा/होगी।

