### Set No. 1

18P/292/25

3607

otal No. of Printed Pages : 28	Question Booklet No
(To be filled up by the can	didate 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/que tion 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.
- Do not bring any loose paper or blank, inside ation Hall except the Admit Card.
- A separate OMR Answer Sheet is given. It should not be folded of mutilated. A second OMR Answer Sheet shall not be provided Only the OMR Answer Sheet will be evaluated.
- Write all the entries by blue/black ball pen in the space provided above.
- 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 nd the Set Number (wherever applicable) in appropriate places.
- No overwriting is allowed in the entries of Roll No., Question. Soklet No. and Set No. (if any) on OMR Answer Sheet and also Roll No. and OMR Answer Sheet Serial No. on the Question Booklet.
- 7. 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.
- 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 11. Booklet.
- On completion of the Test, the Candidate must handover the OMR Answer Sheet to the Invigilator 12. in the examination room/hall. However, candidates are allowed to take away Text Booklet and copy of OMR Answer Sheet with them.
- Candidates are not permitted to leave the Examination Hall until the end of the Test.
- 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.

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

### SPACE FOR ROUGH WORK

रफ़ कार्य के लिए जगह

### No. of Questions: 120

Fime: 2 Hours Full Marks: 360

Note:

- 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)  $n \log 2 = \log N + \log N_0$

(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

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, genetically	y related groups represent a
	(1) Clone (2) Clade (3	Kingdom (4) Domain
5.	. Which one of the following is not found	l in phytoplasma cell membrane?
	(1) Proteins (2) Lipids (3	Sterols (4) Fatty acids
6.	. Clinically useful aminoglycosides include	es
	(1) Penicillin (2)	Cephalosporin
	(3) Streptomycin (4)	Erythromycin
7.	Dipicoline acid is formed mainly in v structures?	which one of the following bacterial
	(1) Flagella (2) Sex pilus (3)	Capsule (4) Endospore
25		
8.	E. coli genomic DNA has approximately	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 for	rmed during the replication of
	(1) Bacteriophage	(2) Bacteria
	(3) Yeast	(4) Plant virus
11.	Bacteroids surrounded by a plant of	cytoplasmic membrane form structures calle
	(1) Infection thread	(2) Symbiosome
	(3) Nod factors	(4) Root nodules
12.	Which one of the following has be nitrogen?	peen used to enrich rice paddies with fixe
	(1) Azolla	(2) Rhizobium
	(3) Streptomyces	(4) Agrobacterium
13.	The cos sites of bacteriophage lamb	oda is made up of how many nucleotides?
	(1) 8 (2) 12	(3) 16 (4) 20
14.	Which one of the following is not	a mutagen?
	(1) Ethidium bromide	(2) X-ray
	(3) Transposons	(4) Salicylic acid
(61)		3 (P.T.O

The tac repressor	functions as a			
(1) Monomer	(2) Dimer	(3)	Trimer	(4) Tetramer
A oxygenic photo	troph, prochloropl	nyte, o	contains	
(1) Phycobilins as	nd chlorophyll <u>b</u>			
(2) Chlorophylls	$\underline{a}$ and $\underline{b}$ , and no	phycol	oilins	
(3) Phycobilins as	nd chlorophylls <u>a</u>	and <u>b</u>	2	
(4) Phycobilins a	nd no chlorophyll	s		
Which one of the	following is a Mo	oFe pr	otein?	
(1) Dinitrogenase	<b>.</b>	(2)	Dinitrogenase	reductase
(3) 1,3-β-glucana	se	(4)	DNA polymera	ase
		s an ii	nherited proper	rty of a bacterium. This
(1) Com protein	genes	(2)	Nif genes	
(3) Trp operon		(4)	siRNA	
A mutant with a	growth requireme	ent for	a specific nu	trient is known as
(1) Autotroph	(2) Auxotroph	(3)	Heterotroph	(4) Phototroph
		4		
	<ul> <li>(1) Monomer</li> <li>A oxygenic photo</li> <li>(1) Phycobilins at</li> <li>(2) Chlorophylls</li> <li>(3) Phycobilins at</li> <li>(4) Phycobilins at</li> <li>(4) Phycobilins at</li> <li>(5) Which one of the</li> <li>(1) Dinitrogenase</li> <li>(2) Chlorophylls</li> <li>(3) Phycobilins at</li> <li>(4) Phycobilins at</li> <li>(5) The phycobilins at</li> <li>(6) The phycobilins at</li> <li>(7) Dinitrogenase</li> <li>(8) Taking up DNA be is due to the present</li> <li>(9) Com protein</li> <li>(1) Com protein</li> <li>(2) Trp operon</li> <li>(3) Trp operon</li> </ul>	A oxygenic phototroph, prochloroph  (1) Phycobilins and chlorophyll <u>b</u> (2) Chlorophylls <u>a</u> and <u>b</u> , and no g  (3) Phycobilins and chlorophylls <u>a</u> (4) Phycobilins and no chlorophyll  Which one of the following is a Mo  (1) Dinitrogenase  (3) 1,3-β-glucanase  Taking up DNA by transformation is due to the presence of  (1) Com protein genes  (3) Trp operon  A mutant with a growth requirement	(1) Monomer (2) Dimer (3)  A oxygenic phototroph, prochlorophyte, of (1) Phycobilins and chlorophyll <u>b</u> (2) Chlorophylls <u>a</u> and <u>b</u> , and no phycol (3) Phycobilins and chlorophylls <u>a</u> and <u>b</u> (4) Phycobilins and no chlorophylls  Which one of the following is a MoFe pr (1) Dinitrogenase (2) (3) 1,3-β-glucanase (4)  Taking up DNA by transformation is an initial due to the presence of (1) Com protein genes (2) (3) Trp operon (4)	(1) Monomer (2) Dimer (3) Trimer  A oxygenic phototroph, prochlorophyte, contains  (1) Phycobilins and chlorophyll <u>b</u> (2) Chlorophylls <u>a</u> and <u>b</u> , and no phycobilins  (3) Phycobilins and chlorophylls <u>a</u> and <u>b</u> (4) Phycobilins and no chlorophylls  Which one of the following is a MoFe protein?  (1) Dinitrogenase (2) Dinitrogenase  (3) 1,3-β-glucanase (4) DNA polymer.  Taking up DNA by transformation is an inherited proper is due to the presence of  (1) Com protein genes (2) Nif genes  (3) Trp operon (4) siRNA

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 $N_2$ (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 (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.)				

25.	The mode of nutrition of methan	ogenic bacteria is	
	(1) Chemoautotrophic	(2) Photohetero	otrophic
	(3) Chemoorganotrophic	(4) Auxotrophi	c
26.	Select the mismatch:		
	(1) Phycoerythrin pigment — Nor	n-photosynthetic	
	(2) Heterocyst — Anaerobic cell		
	(3) Bacterial endospores — Heat	resistant cells	
	(4) Ammonium nitrogen — Elect	ron donor	
27.	The association and dissociation concentrations of	of ribosomal subur	its are dependent on the
	(1) Mg ions (2) Ca ions	(3) Na ions	(4) Mn ions
28.	If a bacterial cell divides in every formed in two hours?	20 minutes, how m	any bacterial cells will be
	(1) 16 (2) 24	(3) 64	(4) 32
29.	The main biological function of na gold and copper mines is	turally occurring ba	cteria associated with the
	(1) To oxidize reduced sulfur and	d form H <sub>2</sub> SO <sub>4</sub>	
	(2) To convert ammonia to nitrat	ie.	
	(3) To oxidize Fe <sup>+2</sup> to Fe <sup>+3</sup>		
	(4) To fix N <sub>2</sub>		
61)		6	

30.	When an old bacterial culture is growth phase will be	transfer	red to fresh basal medium, the la
	(1) Prolonged	(2) A	Absent
	(3) Reduced	(4) V	Without any change
31.	When mutation occurs due to the s base, it is called as	substitut	ion of a pyrimidine base by a purine
	(1) Transition	(2) T	ransgenic 'ransgenic
	(3) Transformation	(4) T	ransversion
32.	The 'Super Bug', a transgenic bacter caused by	rial strai	n, was created to clean the pollution
	(1) Pesticides	(2) E	Cutrophication
	(3) Heavy metals	(4) P	etroleum hydrocarbons
33.	How many quanta of light energy equivalents (with the production of evolution of one molecule of O <sub>2</sub> from	f 4 reduc	cing equivalents), necessary for the
	(1) 8 (2) 12	(3) 6	(4) 4
34.	The entire network of cell cytoplasmodesmata is referred as	plasm c	of plant cells, interconnected by
	(1) Apoplast	(2) S <sub>1</sub>	pheroplast
	(3) Symplast	(4) Pr	rotoplast
(61)	,	7	(P.T.O.)

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35.	Which of the following is primary	transporter?
	(1) Antiporter	(2) Symporter
	(3) Uniporter	(4) ABC transporters
36.	Cyanobacteria differ from purple an	d green phototrophic bacteria because they
	(1) Show oxygenic photosynthesis	
	(2) Use H <sub>2</sub> S as an electron donor	
	(3) Have a membrane-enclosed nu	acleus
	(4) Do not require light	
37.	Which of the following is not a sin	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	l formation
	(2) Synapsis, bivalents, crossing-	over
	(3) Recombination nodules, synap	osis and bivalents
	(4) Bivalents, synapsis, tetrad for	mation

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39.	Which of the following is arg	nine rich?
	(1) H1 (2) H2A	(3) H2B (4) H3
40.	Cell cycle is regulated by the	master control molecules known as
	(1) Transferases	(2) Lipases
	(3) Kinases	(4) Dehydrogenases
41.	Which of the following is a n	icrofilament?
	(1) Keratin (2) Actin	(3) Desmin (4) Tubulin
42.	Which of the following is her	nizygous?
	(1) Male mice	(2) Male Drosophila
	(3) Female Drosophila	(4) Male plant of Melandrium
43.	Which of the following combin evolution'?	ations is true as proponents of 'synthetic theory o
	(1) T. Dobzhansky, R. A. Fis	ner, Lamarck, J. B. S. Haldane, Ernst Mayr
	(2) T. Dobzhansky, R. A. Fis	ner, Darwin, J. B. S. Haldane, Ernst Mayr
	(3) T. Dobzhansky, R. A. Fish	er, Hugo de Vries, J. B. S. Haldane, Ernst Mayr
	(4) T. Dobzhansky, R. A. Fish G. L. Stabbins	er, J. B. S. Haldane, Ernst Mayr, Sewall Wright
44.	'Linkage map' is also referre	i to as
	(1) Chromosome map	(2) Physical map
	(3) Restriction map	(4) Ganetic map
<b>61</b> )		9 (P.T.O

45.	In glycolysis fruct by the enzyme	ose-	5-phosphate i	s trar	nsformed to fru	actos	se 1,6-dip	ohosphat
	(1) Hexokinase			(2)	Phosphohexoi	some	erase	
	(3) Phosphofructo	okina	ise	(4)	Phosphotriosc	iso	merase	
46.	Chitin is a							
	(1) Polypeptide			(2)	Polysaccharide	е		
	(3) Polyphosphat	e		(4)	Lipid			
47.	Which of the follo	owing	g enzyme is r	espon	sible for DNA	chai	in elonga	tion?
	(1) DNA polymera	ase I		(2)	DNA polymera	ase l	II	
	(3) DNA polymera	ase I	II	(4)	RNA polymera	ase		
48.	Agarose-gel electr	opho	oresis is used	for s	eparating			
	(1) Proteins			(2)	Nucleic acids			
	(3) Lipids			(4)	Carbohydrates	S		
49.	Which of the foll through splitting	owin of w	g element is ater by chang	respo	nsible for evol	lving ates:	oxygen	in plant
	(1) Fe	(2)	Mg	(3)	Mn	(4)	Cu	
50.	Psammophytes gr	ow c	on					
	(1) Stone	(2)	Saline land	(3)	Sand	(4)	Marshy	lands
(61)			1	0				
()			1					

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
EO	0	
53.	One gene-one enzyme hypothesis wa	as given by
	(1) Beadle and Tatum	(2) Jacob and Monad
	(3) Watson and Crick	(4) Luria and Delbrick
54.	Clathrin coated vesicles are meant f	for
	(1) Extracellular traffic	(2) Intracellular traffic
	(3) Coating vacuole	(4) Protein synthesis
55.	Which one of the following are term	inator codons?
	(1) UAA, UAG, UGA	(2) AUG, UAG, UGA
	(3) UAC, AUG, UAG	(4) AUG, ACG, GAG

56.	The starting tRNA of prokaryotes is loaded with							
	(1) Valine (2) Methionine							
	(3) Tryptophan (4) Formylated methionine							
57.	Which of the following contains hydrolytic enzymes?							
	(1) Dictyosomes (2) Peroxisomes (3) Lysosomes (4) Carboxysomes							
58.	$K_m$ (Michaelis-Menten constant) is defined as							
(1) The substrate concentration at which all of the enzyme molecul- forming ES complex								
	(2) The substrate concentration at which <sup>3</sup> / <sub>4</sub> of the enzyme molecules are forming ES complex							
	(3) The substrate concentration at which ½ of the enzyme molecules are forming ES complex							
	(4) The substrate concentration at which \(\frac{1}{3}\) of the enzyme molecules are forming ES complex							
59.	The study of genetic material recovered directly from environmental samples is known as							
	(1) Metagenomics (2) Proteomics							
	(3) Genomics (4) Metabolomics							
60.	MAB stands for							
	(1) Man and Biology (2) Man and Biosphere Programme							
	(3) Map and Biology (4) Management and Biosphere							
(61)	12							

(P.T.O.)

61.	How many CO <sub>2</sub>	molecules exit fro	m citric acid cycl	e?	
	(1) One	(2) Two	(3) Three	(4) Four	
		200			
62.	Which one of the delayed hypersen		noglobulins is ass	ociated with anaph	ylactio
	(1) IgE	(2) IgA	(3) IgG	(4) IgM	
63.	A population of in	dividuals of specie	es, having genetic	differences is referre	d as
	(1) Ecotype	(2) Ecad	(3) Ecotone	(4) Biotype	
64.	Which one of the	following gases i	s microbiocidal ir	nature?	
	(1) Nitrogen		(2) Ethylene o	xide	
	(3) Hydrogen		(4) Oxygen		
65.	Edman's reagent during one cycle		equence determina	ation of a protein be	ecause
	(1) Modifies and	cleaves only N-ter	rminal amino acio	l residue	
	(2) Modifies and	cleaves only C-ter	rminal amino acid	d residue	
	(3) Cleaves N-terr	ninal amino acid	residue in native	form	
	(4) Cleaves C-terr	ninal amino acid	residue in native	form	

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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 2nd amino acid								
(3) $\beta/\gamma$ -NH2 of 1st and $\beta/\gamma$ -COOH of 2nd amino acid									
	(4) $\alpha$ -C of 1st and $\alpha$ -C of 2nd amin	o acid							
67.	Which one of the following stabilizes	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 hea 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 wh	nich major class of the enzymes?							
	(1) Ligases	(2) Transferases							
	(3) Oxido-reductases	(4) Isomerases							
51)	14								

dentity 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 eac	h 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-fru	ctose			
Identify the glycolytic enzyme which synthesis	n is associated with sub	strate level ATP			
(1) Phosphofructokinase	(2) Hexokinase				
(3) Pyruvate kinase	(4) Aldolase				
Identify a decarboxylase out of the	TCA cycle enzymes given	below			
(1) Isocitrate dehydrogenase	(2) Succinate dehydroge	enase			
(3) Fumerase	(4) Malate dehydrogenas	se			
The 'Fo' domain of the mitochondria represents	al Fo-F1 complex is name	ed so because it			
(1) The protein fragment given no n	umber				
(2) The protein fragment that does	not perform catalytic fun	ction			
(3) Cofactor binding domain					
(4) Domain that confers oligomycin	sensitivity to the complex	x			
15	j	(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 represents (2) The protein fragment that does (3) Cofactor binding domain (4) Domain that confers oligomycin	<ul> <li>(1) Dihydroxy acetone</li> <li>(2) Glyceraldehyde</li> <li>(3) Xylulose</li> <li>(4) Ribulose</li> <li>Which one of the following pairs represents an isomer to each (1) D-glucose and L-glucose</li> <li>(2) α-D-glucose and β-D (2) α-D-glucose and β-D (3) D-glucose and D-mannose</li> <li>(4) D-glucose and D-fruit (4) D-glucose and D-fruit (5) D-glucose and D-fruit (7) Phosphofructokinase</li> <li>(1) Phosphofructokinase</li> <li>(2) Hexokinase</li> <li>(3) Pyruvate kinase</li> <li>(4) Aldolase</li> <li>(5) Fumerase</li> <li>(6) Malate dehydrogenase</li> <li>(7) Fumerase</li> <li>(8) Malate dehydrogenase</li> <li>(9) Malate dehydrogenase</li> <li>(10) The protein fragment given no number</li> <li>(11) The protein fragment that does not perform catalytic functions</li> </ul>			

(61)

76.	Which one of the following enzymes	synthesize a cell signaling factor?
	(1) Cyclooxygenase	(2) Cytochrome oxidase
	(3) Cytochrome-Q-reductase	(4) Co-A reductase
77.	The protein part of an enzyme, v	which utilizes cofactors for its catalytic
	(1) Apoenzyme	(2) Coenzyme
	(3) Holoenzyme	(4) Native enzymc
78.	Which one of the following is an an	nphoteric molecule?
	(1) α-Glycine (2) Triglyceride	(3) Sucrose (4) Phospholipid
79.	Out of the following lipids, which one	contains maximum number of fatty acids?
	(1) Cholesterol	(2) Biological wax
	(3) Prostaglandin	(4) Triglyceride
80.	In a nucleotide structure, phosphat	e is attached to the ribose sugar by a
	(1) Phosphoester bond	(2) Phosphodiester bond
	(3) Glycoside	(4) Peptide
81.	2'-deoxy-cytidine is a	
	(1) Nucleotide	(2) Di-nucleotide
	(3) Modified base	(4) Nucleoside

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82.	Which one of the following RNAs assu	ime tertiary structur	re for its functions?
	(1) Hn-RNA (2) mRNA	(3) tRNA	(4) 5S rRNA
83.	During prokaryotic DNA synthesis, R	NA primers at laggi	ng strand are removed
	(1) S1 nuclease	(2) DNA polymera	se I
	(3) DNA polymerase III	(4) RNase II	
84.	Which analytical tool was used by He serves as hereditary material and no	rshey and Chase to ot the proteins?	demonstrate that DNA
	(1) Radiotracer technique		
	(2) X-ray diffraction analysis		
	(3) Spectrometry	52	
	(4) Density gradient centrifugation		
85.	The polymerase that synthesizes independent manner is	a polynucleotide	chain in a template
	(1) DNA Pol-I	(2) DNA Pol-III	
	(3) RNA polymerase	(4) Poly-a polymer	rase
86.	Discovery of ribozymes associates w	ith	
	(1) RNA splicing	(2) Transcriptiona	l silencing
	(3) Translational silencing	(4) DNA ligase act	tivity

87.	Identify the factor that terminal	tes prokaryotic trar	slation	
	(1) 1F2-GTP (2) 1F2	(3) RF1	(4) RG3	
88.	In a charged tRNA, amino acid	is linked at		
	(1) 3'-end			
	(2) 5'-end			
	(3) D-loop			
	(4) Adjacent to anti-codon sequ	iences		
89.	A human recombinant gene ca because  (1) Genetic code is universal	n be successfully t	ranslated in <i>E. coli</i> . Th	ni
	(2) Genetic code is degenerate	type		
	(3) E. coli and human have sim	nilar translational f	actors	
	(4) E. coli and human have sim	nilar ribosomal orga	nization	
90.	Which one is used as a genetic	c vector?		
	(1) λ-Phage DNA	(2) Retrovira	l RNA	
	(3) Retrovial cDNA	(4) RNA prin	ner	
(61)		10		

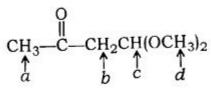
91.	In a P700 reaction centre of chloroph	yll, 700 denotes for	
	(1) Light wavelength		
	(2) Number of reaction centres		
	(3) Potential of the photosystem		
	(4) Number of water molecule split		
92.	During photosynthetic dark reaction,	the inorganic C is fixed with	
	(1) Ribulose 2,5-bisphosphate	(2) Ribose 2,5-bisphosphate	
	(3) Ribulose 1,5-bisphosphate	(4) Ribose 1,5-bisphosphate	
93.	Identify the Cu containing photosynt	hetic pigment	
	(1) Chlorophyll	(2) Plastocyanin	
	(3) Thioredoxin	(4) Ferredoxin	
94.	<ul> <li>In eukaryotes, the first transcript syr as</li> </ul>	thesized by RNA polymerase II is re	ferred
	(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	
العالمان	. 1	9	(P.T.O.)

(61)

96.	Titration of a completely protonated solution of $\alpha$ -arginine against a base would produce pK values of						
	(1) One		Two	(3)	Three	(4)	Four
97.	Maximum numbe	r of	electrons in a	sub	shell with $l=3$	and	1 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-brome	-2-t	outanol CH <sub>3</sub> CH	H(O)	H) CHBrCH <sub>3</sub> exist?
	(1) 2	(2)	4	(3)	3	(4)	1
100.	The isomers which	car	n be interconver	ted	through rotation	n ar	ound a single bond
	(1) Conformers			(2)	Diastereomers		
	(3) Enantiomers			(4)	Positional ison	ners	;
101.	Standard enthalpy burnt in excess o		ange of combu	stior	occurs when	1 m	nol 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 reage	nt te	est	(2)	Fehling solution	on t	est	
	(3) Benedict test			(4)	Iodoform test			
103.	The enzyme, tyros	sinas	se, is activated	by				
	(1) iron	(2)	copper	(3)	zinc	(4)	potassiun	ı
104.	In hemoglobin, th	ie tra	ansition from T	` sta	te to R state i	s tri	ggered by	
	(1) Fe <sup>2+</sup> binding			(2)	Heme binding			
	(3) Oxygen bindir	ıg		(4)	Subunit assoc	iatio	on	
105.	Ethylene glycol re	acts	with dimethyl	tere	phthalate to fo	orm		
	(1) Nylon-6·6	(2)	Teflon	(3)	Orlon	(4)	Dacron	
106.	The number of asy	mme	etric carbon ato	ms i	in the α-D-gluce	pyr	anose mole	cule is
	(1) 2	(2)	3	(3)	4	(4)	5	
107.	Which is a disacc	hari	de?					
	(1) Glucose	(2)	Maltose	(3)	Fructose	(4)	Cellulose	
(61)			21					(P.T.O.)

Which of hydrogens a-d in the following molecule gives a triplet signal in a 108. normal 1HNMR spectrum?



- (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 112.

(1) becomes zero

(2) decreases

(3) increases

(4) remains same

The value of free energy change at equilibrium is 113.

- (1) positive
- (2) negative
- (3) zero
- (4) not definite

(61)

114.	Which one of the following is not a hard base?					
	(I) NH <sub>3</sub>	(2) H <sub>2</sub> O	(3) C1 <sup>-</sup>	(4) CN <sup>-</sup>		
115.	Hg <sup>2-</sup> is classified	as				
	(1) soft acid	(2) hard acid	(3) soft base	(4) hard base		
116.	Winkler method is	s used to determi	ne			
	(1) Dissolved Oxy	gen (DO)				
	(2) Biochemical C	oxygen Demand (E	BOD)			
	(3) Organic Carbo	on (OC)				
	(4) Elemental Car	bon (EC)				
117.	The smog is gene	rally caused by th	ne presence of			
	(1) $O_2$ and $O_3$		(2) NO <sub>X</sub> and SO	x		
	(3) $O_2$ and $N_2$		(4) $O_3$ and $N_2$			
118.	The prefixes Z an	d E stand for				
	(1) Zeigler-Erhard	ĺ	(2) Zwitter-Eryth	ro		
	(3) Zirco-Estrogen	Ĭ.	(4) Zusammen-E	nteggen		
(61)		2	3	(P.T.O.)		

- 119. Bakelite is a cross-linked polymer of
  - (1) Phenol

- (2) Formaldehyde
- (3) Both phenol and formaldehyde
- (4) Wool
- 120. α-D-glucose and β-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 ओ०एम०आर० उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली/काली बाल-प्वाइंट पेन से ही लिखें)

- 1. 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 द्स प्रस्तिका प्राप्त कर लें।
- 2. परीक्षा भवन में प्रवेश-पत्र के अविरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
- 3. 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 प्रविष्टियाँ प्रथम आवरण-पृष्ठ पर नीली/काली बाल पेन से निर्धारित स्थान पर लिखें।
- 5. ओ०एम०आर० उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्त् 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
- 7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित मण्ड का प्रयोग माना जायेगा।
- 8. प्रध्न-पुस्तिका में प्रत्येक प्रथ्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपक ओल्एम०आर० उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को ओल्एम०आर० उत्तर-पत्र के प्रथम पृष्टिये 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 अबर एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
- 10. ध्यान दें कि एक बार स्याही 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 ओ०एम०आर० उत्तर-पत्र परीक्षा कक्ष/हाल में कक्ष निरीक्षक को सींप हैं। अभ्यः अपने साथ प्रश्न-पुस्तिका तथा ओ०एम०आर० 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।