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Reg. No.			
Reg. 110.			

## B.Tech. DEGREE EXAMINATION, JUNE 2023 Third and Fourth Semester

## 18BTB101T - BIOLOGY

(For the candidates admitted from the academic year 2018-2019 to 2021-2022)

(i) Part - A should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.  (ii) Part - B & Part - C should be answered in answer booklet.  Time: 3 hours  Max. Marks: 100  PART - A (20 × 1 = 20 Marks)  Answer ALL Questions  1. Carbohydrate chains in the membrane are present in  (A) Glycerol chain of fatty acid (B) Lipid bi layer  (C) Trans membrane protein (D) Cytosolic protein  2. Negative charge of DNA is due to  (A) Bases attached to 1st carbon of (B) Ribose sugar ribose sugar  (C) Phosphate group in the 5th (D) Hydroxyl group in 3std carbon of carbon of ribose  3. Which of the following amino acids you should include in diet?  (A) Leucine and lysine (B) Leucine and glycine  (C) Cysine and alanine (D) Leucine and serine  4. Sugar in RNA is  (A) Ribose (B) Ribulose  (C) Hexose (D) Triose  5. Antigen-antibody association is by  (A) Non covalent interaction (B) Covalent interaction  (C) Orientation (D) Proximation  6. Hydrophilic nature of phospholipid is because of  (A) Phosphate containing polar (B) Phosphate containing polar tail head  (C) Fatty acid in polar head (D) Fatty acid in polar tail  7. Different type of amino acids vary in  (A) Carboxyl group (B) Length of amino group  (C) Type of amino group (D) Type of side group  8. Which of the following amino acids has single codon?  (A) Leucine (B) Cysteine	Note:								
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			_						
(C) Serine (D) Methorine		(C)	Serine	. ,	Methionine				

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	9.	28S rRNA is present in			1	2	4	1
		(A) 60S subunit of eukaryotic	(B)	40S subunit of eukaryotic	;			
				ribosome				
		(C) 30S subunit of prokaryotic			;			
		ribosome		ribosome				
	10.	Blood stem cells present in bone marr			1	2	4	1
		(A) Totipotent stem cell	(B)	Multipotent stem cell				
		(C) Pluripotent stem cell	(D)	Mature cell				
	11.	Thrombin hasin active si	te.		1	2	4	1
		(A) Serine	(B)	Cysteine				
		(C) Histidine	(D)	Alanine				
	12.	Non competitive inhibitors of enzyme	bine	d to	1	2	4	1
		(A) Active site only	(B)	Active site or allosteric site				
		<ul><li>(A) Active site only</li><li>(C) Only in allosteric site</li></ul>	(D)	Does not bind to enzyme				
	13.	The diameter of flagellar motor is			1	2	5	1
		(A) 50 μm	(B)	50 cm				
		(C) 30 nm	(D)	500 nm				
6	14.	The flow ofions in alkal	loph	ic species create electrochemical	1	2	5	1
		gradient in membrane	-	-				
			(B)	Na <sup>+</sup> ions				
		(C) $Mg^{2+}$ ions	(D)	Ca <sup>2+</sup> ions				
	15.	Addition of indigenous microorganis	sm (	or exogenous microorganism in	. 1	2	5	1
		bioremediation is						
				Bioaugmentation				
		(C) Biostimulation	(D)	In situ biodegradation				
	16.	Recycling of neurotransmitters are don	ne by	y	1	2	5	1
		(A) Schwann cells		Ependymal cells				
		(C) Microglial cells	(D)	Astrocytes				
	17.	Peyer's patches are present in			1	2	6	1
			` '	Intestine				
		(C) Lymph nodes	(D)	Bone marrow				
	18.	Signal transducer which detect change	in n	mass is	1	2	6	l
		( m)		Amperometric device				
		(C) Electrode	(D)	Piezoelectric device				
	19.	The distinctive markers on antigen tha			1	2	6	1
		( m) = 4.4	. ,	Paratope				
		(C) Idiotope	(D)	Isotope				
	20.	Lymphokines are released by			1	2	6	1
		f miles	. ,	B cells				
		(C) Cytotoxic t cells	(D)	Antigen presenting cells				
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24	PART – B ( $5 \times 4 = 20$ Marks) Answer ANY FIVE Questions	Marks	BL,		РО
21.	Differentiate smooth and rough endoplasmic reticulum.	4	3	1	1
22.	List out the components of nucleic acid with its property.	4	2	2	1
23.	Differentiate non covalent bonds with covalent bond that is present in protein.	4	3	2	1
24.	Analyze how specificity of enzyme is determined.	4	3	4	2
25.	Comment on myosin linear motor.	4	3	5	3
26.	How immune cell differentiate self and non self-cells?	4	3	5	3
27.	Write down the process involved in inflammation.	4	3	6	3
	$PART - C (5 \times 12 = 60 Marks)$				
20 -	Answer ALL Questions	Marks	BL	со	PO
28. a.	Write in detail about role of nervous system in maintaining homeostasis in human body.	12	2	" 1	3
	(OR)				
b.	Explain the process of somatic cell division with suitable examples.	12	3	1	3
29. a.	How stem cells are isolated and cultured for use in regenerative medicine.	12	3	2	3
,	(OR)				
D.	How are proteins synthesized from amino acids? Explain the process with suitable diagrams.	12	3	2	3
30. a.	Explain the process of photosynthesis with suitable diagrams.	12	3	3	2
	(OR)				
b.	Outline the concept of genetic code.	12	4	4	2
31. a.	Draw the structure of ATP synthase and explain how ATPs are synthesized.	12	3	5	3
	(OR)				
b.	Write down the steps followed in <i>in situ</i> bioremediation. Add notes on different types of bioremediation.	12	3	5	2
32. a.	Explain the process of cell mediated immunity with examples.	12	4	6	3
b.	(OR) What are primary and secondary lymphoid organ? Explain their role in eliciting immune response.	12	4	6	3