PSM/KW/23/1107-C

Bachelor of Science (B.Sc.) Semester-III Examination MICROBIOLOGY: CHEMISTRY OF ORGANIC CONSTITUENTS AND ENZYMOLOGY (New)

Optional Paper-I

Time: Three Hours)	Maximum Marks 50
Note:—(1) All questions are compulsory and carry equal marks.	201
(2) Draw diagram wherever necessary.	, -41
1. Define Carbohydrates. Explain mono-sacharides and di-saccharide with	suitable example. 10
OR	
Write in detail the structure and nomenclature of saturated and unsatu	rated fatty acids with
suitable example.	10
2. Describe the secondary structure of proteins with examples.	10
OR	
Give an account of the classification of amino acids on the basis of sid	
3. (a) Derive the equation of Michaelis-Menton.	5
(b) Define Enzyme. Explain the classification system of an enzyme with	h suitable example. 5
OR	
(c) Define enzyme inhibition. Explain the competitive inhibition.	. 5
(d) Write about membrane bound enzymes, and zymogens with suitable	examples. 5
(a) What are nucleotides and nucleosides? Give their examples.	21/2
(b) Draw the well-labelled diagram of B-DNA.	21/2
(c) What are water soluble vitamins? Explain any one of them.	21/2
(d) Write a note on Rickets.	21/2
OR >	
	examples. 21/
(e) Write brief about Purines and Pyrimidines. Give their structure with	27
(f) What is RNA? Write briefly about t-RNA.	
g) What is hypovitaminosis? Explain the causes and symptoms of Vitamin	n B12 deficiency. 21/
The state of Vitamin A and its role.	21/
n) Explain in brief Vitaliili A and its rese	

(Contd.)

- 5. Answer the following questions (any TEN):
 - (1) Write the name of storage polysaccharides.
 - (2) What is asymmetric carbon?
 - (3) What is Wax?
 - (4) What is peptide bond?
 - (5) Give any one name of tertiary protein.
 - (6) What is isoelectric pH?
 - (7) What is holo enzyme?
 - (8) What is turnover number ? >
 - (9) What is prosthetic group ?
 - (10) Write the complementary strand of : 5'CGCGTAACGCG3'.
 - (11) Which sugar is present in DNA ?
 - (12) What is the role of ribosomal RNA?

 $1 \times 10 = 10$

NRT/KS/19/2087

Bachelor of Science (B.Sc.) Semester—III Examination

MICROBIOLOGY

(Chemistry of Organic Constituents and Enzymology)

Optional Paper—I

Time : Three Hours]		hree Hours]	[Maximum Marks : 50	
		N.B.: — All questions are compulsory and carry equal m	narks.	
1.	Wri	te notes on :		
	(a)	Structure of starch.	5	
	(b)	Structure of Lecithin and Cephalin.	5	
		OR		
	(c)	Structure of Lactose and Sucrose.	5	
•	(d)	Structure of Cholesterol and prostaglandins.	5	
2.	Cla	ssify amino acids on the basis of structure of side chain.	10	
	Dof	OR ine Protein. Describe tertiary structure of protein in detail.	10	
3.		ive Michaelis-Menton equation and discuss its modifications.	10	
٥.	DCI	OR	10	
	Des	cribe different types of inhibition of enzyme with suitable example.	10	
4.		te short notes on :		
	(a)	Hypervitaminosis	21/2	
	(b)	Structure of t-RNA	21/2	
	(c)	Hypovitaminosis of Vitamin A	21/2	
	(d)	Structure of ATP.	21/2	
	` '	OR		
	(e)	z-DNA	21/2	
	(f)	Difference between DNA and RNA	21/2	
	(g)	Sources and deficiency diseases of Vitamin C	21/2	
	(h)	Classification of vitamins on the basis of solubility.	21/2	
5.	` ′	ve any TEN :		
	(i)	What is an Osazone?	1	
	(ii)	What are triglycerides?	1	
	(iii)	Name any one heteropolysaccharide.	1	
	(iv)	What are essential amino acids?	1	
	(v)	Give an example of Oligomeric protein.	1	
	(vi)	Define neutral amino acid.	1	
	(vii)		1	
	` /	What are Zymogens?	1	
	(ix)	Define Katal.	1	
	(x)	Name any two sources of Vitamin B_{12} .	1	
	(xi)	Draw the structure of Thymine.	1	
	` ′	What is the function of m-RNA?	1	

Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur End Semester Examination (ODD Semester) Winter-2022 Shri Shivaji Education Society Amravati's Science College Congress Nagar Nagpur Bachelor of Science (B.Sc.) Semester-III Examination

Bachelor of Science (B.Sc.) Semester-III Examination
MICROBIOLOGY PAPER-I: CHEMISTRY OF ORGANIC
CONSTITUENTS AND ENZYMOLOGY

Note:	(1) All questions are compulsory and carry equal marks. (2) Draw diagram wherever necessary.	
	•	
1.	Give the classification of lipids in detail.	10
	OR	
	Describethe structure of starch in detail and discuss the structure of osazone	
1. 2. 3. 4.	formation	10
2.	Describethe classification of amino acids with examples.	10
	OR	
	(a) Explain the secondary structure of protein.	5
	(b) Explain titration curve. Draw the graph of titration.	5
3.	Derive Michaelis and Menten equation and explain LB plot.	10
	OR	detail. 10 OR letail and discuss the structure of osazone o acids with examples. 10 OR or of protein. 5 the graph of titration. 5 ation and explain LB plot. 10 OR ive inhibition and derive the equation. 5 of enzyme. 5 nt types of pyrimidines. 5 OR IA 2½ to the deficiency of vit. B. 2½ nosis with suitable example. 2½ one fat soluble vitamin. 2½ ty acids. acids. acids. acids.
	(a) Write a note on non-competitive inhibition and derive the equation.	5
	(b) Discuss the different classes of enzyme.	5
4.	(a)Discuss the structure of different types of pyrimidines.	5
	(b)Discuss the structure of t-RNA	5
	OR	
	(a) Discuss the structure of r-RNA	2½
	(b) Discuss the disease caused due to the deficiency of vit. B.	21/2
	(c) Explain the term hypovitaminosis with suitable example.	21/2
	(d) Explain the function of any one fat soluble vitamin.	21/2
	Solve any ten of the following: (I) What are zymogens. (II) Define epimers. (III) Name any two saturated fatty acids. (IV) Define coenzymes. (V) WhatisZ-DNA? (VI) Define anomers? (VII) Whatis cardiolipin? (VIII) Name any two basic amino acids. (IX) Define allosteric enzyme. (X) Write disease caused by vit. C deficiency. (XI) Draw the structure of maltose. (XII) What is beri-beri?	(1×10)=10
	(MI) What is both both.	

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Bachelor of Science (B.Sc.) Semester-III Examination MICROBIOLOGY PAPER-I: CHEMISTRY OF ORGANIC

	CONSTITUENTS AND ENZYMOLOGY	
	Time: Three Hours	n
No	ote: (1) All questions are compulsory and carry equal marks. (2) Draw diagram wherever necessary.	,
	••	
1.	Discuss the structure of starch and glycogen.	10
	OR	
	Describe the structure of hyaluronic acid in detail and discuss the structure of osazone	
4.	formation	10
. **	Describein detail the secondary structure of proteins.	10
)	(a) Explain peptide bond theory.	
	(b) Explain titration curve. Draw the graph of titration.	5
3.	(a) Define holoenzyme, apoenzyme and explain with diagram.	5
	(b) Explain enzyme code number.	21/2
	(c) Explain competitive inhibition.	2½ 2½
	(d) Discuss the significance of LB plot.	2½ 2½
	OR	2/2
	(a) Write a note on multienzyme complex.	5
	(b) Discuss the different classes of enzyme.	5
4.	Describe the structure of B-Form of DNA.	10
	OR	
	(a) Discuss the structure of GTP.	21/2
	(b) Discuss the disease caused due to the deficiency of vit. B.	21/2
	(c) Write a note on hypervitaminosis.	21/2
<u>}</u>	(d), Give the diagrammatic structure of t-RNA.	21/2
5.	Solve any ten of the following	(1x10)=10
	(I) What are anomers.	
	(II) Define peptide bond.	1
	(III) Name any two unsaturated fatty acids.	
	(IV) Define oligomeric proteins.	
	(V) What is meant by zymogens?	

(VIII) Name any two aromatic amino acids. (IX) Define ES complex. Define nucleotides. (X)

(XI) Define glycosidic linkage.

(VI) Define prosthetic group? (VII) What is meant by katal?

(XII) Differentiate between Nucleoside and Nucleotide.

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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur End Semester Examination (ODI) Semester) Winter-2022 Shri Shivaji Education Society Amravati's Science College Congress Nagar Nagpur Bachelor of Science (B.Sc.) Semester-III Examination MICROBIOLOGY PAPER-I: CHEMISTRY OF ORGAN

	MICROBIOLOGY PAPER-1: CHEMISTRY OF ORGANIC CONSTITUENTS AND ENZYMOLOGY	
Note:	Time: Three Hours (1) All questions are compulsory and carry equal marks. (2) Draw diagram wherever necessary. (Maximum Marks: 50)	
1.	(a) Give the classification of lipids.(b) Write a note on cerebrosides and gangliosides.	5
	• OR	5
	Describe the structure of glycogen in detail and discuss the structure of raffinose	10
2.	Describe the α -helical and β -pleated sheet structure of proteins.	10
	OR	
	(a) Explain peptide bond theory.	5
3.	(b) Explain titration curve. Draw the graph of titration.	5
٥.	Derive Michaelis and Menten equation and explain LB plot.	10
	(a) Write a note on non-competitive inhibition and derive the counting	
	(a) Write a note on non-competitive inhibition and derive the equation.(b) What are isoenzymes? Explain with suitable example.	5
	Explain with suitable example.	5
4.	(a)Discuss the structure of different types of pyrimidines.	_
	(b) Explain different forms of DNA.	5
	OR	5
	(a) Discuss the structure of t-RNA	21/2
	(b) Discuss the disease caused due to the deficiency of vit. B.	21/2
	(c) Explain the term hypovitaminosis with suitable example.	21/2
	(d) Explain the function of any one water soluble vitamin.	21/2
5.	Solve any ten of the following:	(1×10)=10
	(I) What are oligomeric proteins.	
	(II) Define amino acids.	
	(III) Name any two unsaturated fatty acids. (IV) Define prosthetic group.	
	(V) What is B-DNA?	
	(VI) Define anomers?	/
	(VII) Whatis cardiolipin?	
	(VIII) Name any two acidic amino acids.	
	(IX) Define allosteric enzyme.	
	(X) Write disease caused by vit. C deficiency.	,

(XI) Draw the structure of lactose.

(XII) Differentiate between Deoxyribose and ribose.

31-12-22

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Shri Shivaji Education Society Amravati's Science College Congress Nagar Nagpur

Bachelor of Science (B.Sc.) Semester-III Examination MICROBIOLOGY PAPER-I: CHEMISTRY OF ORGANIC

CONSTITUENTS AND ENZYMOLOG	iΥ
Time: Three Hours	(Maximum Marks: 50)
Note: (1) All questions are compulsory and carry equal marks.	(

NC	(1) All questions are compulsory and carry equal marks. (2) Draw diagram wherever necessary.	
	•	
1.	Discuss the structure of starch and glycogen.	10
	OR	
	Describe the structure of hyaluronic acid in detail and discuss the structure of osazone	
	formation	10
1000	Describein detail the secondary structure of proteins.	10
)	(a) Explain peptide bond theory.	5
	(b) Explain titration curve. Draw the graph of titration.	5
3.	(a) Define holoenzyme, apoenzyme and explain with diagram.	21/2
	(b) Explain enzyme code number.	21/2
	(c) Explain competitive inhibition.	21/2
	(d) Discuss the significance of LB plot.	21/2
	OR	
	(a) Write a note on multienzyme complex.	5
	(b) Discuss the different classes of enzyme.	5
4.	Describe the structure of B-Form of DNA.	10
	OR	
	(a) Discuss the structure of GTP.	21/2
1.	(b) Discuss the disease caused due to the deficiency of vit. B.	21/2
CC.	(c) Write a note on hypervitaminosis.	21/2
)	(d) Give the diagrammatic structure of t-RNA.	21/2
5.	Solve any ten of the following	(1x10)=10
٥.	(I) What are anomers.	,
	(II) Define peptide bond.	
	(III) Name any two unsaturated fatty acids.	
	(IV) Define oligomeric proteins.	
	(V) What is meant by zymogens?	
	(VI) Define prosthetic group?	
	(VII) What is meant by katal?	
	(VIII) Name any two aromatic amino acids.	
	(IX) Define ES complex.	
	(X) Define nucleotides.	
	(XI) Define glycosidic linkage.	
	(XII) Differentiate between Nucleoside and Nucleotide.	
	(Au) Differentiale between reactions and reactions.	

Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur End Semester Examination (ODD Semester) Winter-2022 Shri Shivaji Education Society Amravati's Science College Congress Nagar Nagpur Bachelor of Science (B.Sc.) Semester-III Examination MICROBIOLOGY PAPER-I: CHEMISTRY OF ORGANIC CONSTITUENTS AND ENZYMOLOGY

Time: Three Hours Note: (1) All questions are compulsory and carry equal marks. (2) Draw diagram wherever necessary.	:
1. (a) Give the classification and the	
(b) Write a note on cerebrosides and gangliosides.	5 5
Describe the structure of alvesses in the str	3
Describe the structure of glycogen in detail and discuss the structure of raffinose. 2. Describe the α-helical and β-pleated sheet structure of proteins.	10
Fronted sheet structure of proteins.	10
(a) Explain peptide bond theory.	
(b) Explain titration curve. Draw the graph of titration	5
3. Derive Michaelis and Menten equation and explain LB plot.	5
OR	10
(a) Write a note on non-competitive inhibition and derive the equation.	•
(b) What are isoenzymes? Explain with suitable example.	5
· ·	5
4. (a)Discuss the structure of different types of pyrimidines.	
(b) Explain different forms of DNA.	5
OR	5
(a) Discuss the structure of t-RNA	21/2
(b) Discuss the disease caused due to the deficiency of vit. B.	
(c) Explain the term hypovitaminosis with suitable example.	2½
(d) Explain the function of any one water soluble vitamin.	21/2
one water soluble vitamin.	21/2
Solve any ten of the following:	(1×10)-10
	$(1\times10)=10$
(I) What are oligomeric proteins.	
(II) Define amino acids.	
(III) Name any two unsaturated fatty acids.	
(IV) Define prosthetic group.	
(V) What is B-DNA?	
(VI) Define anomers?	
VII) Whatis cardiolipin?	
VIII) Name any two acidic amino acids.	
X) Define allosteric enzyme.	
Write disease caused by vit. C deficiency.	
I) Draw the structure of lactose.	
ID Differentiate between Deoxyribose and ribose.	

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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur End Semester Examination (ODD Semester) Winter-2022

Shri Shivaji Education Society Amravati's Science College Congress Nagar Nagpur

Bachelor of Science (B.Sc.) Semester-III Examination MICROBIOLOGY PAPER-1: CHEMISTRY OF ORGANIC

CONSTITUENTS AND ENZYMOLOGY

	No	ote: (1	Time: Three Hours (Maximum Marks: 50) All questions are compulsory and carry equal marks. Draw diagram wherever necessary.	
	1	(a)	Give the classification of lipids. Write a note on cerebrosides and gangliosides.	5 5
		De	OR	
	. 2.	De	scribe the structure of glycogen in detail and discuss the structure of raffinose.	10
			sorted the deficient and p-pleated sheet structure of proteins.	10
		(a)	Explain peptide bond theory.	
		(b)	Explain titration curve. Draw the control of the control of the curve	5
	3.		Explain titration curve. Draw the graph of titration. rive Michaelis and Menten equation and explain LB plot.	5
				10
		(a)	Write a note on non-competitive inhibition	
		(b)	Write a note on non-competitive inhibition and derive the equation.	5
			What are isoenzymes? Explain with suitable example.	5
	4.	(a)I	Discuss the structure of different types of pyrimidines.	
		(b)	Explain different forms of DNA.	5
		(-)		5
			OR	
1		(a)	Discuss the structure of t-RNA	•
		(b)	Discuss the disease caused due to the deficiency of vit. B.	2½
		(c)	Explain the term hypovitaminosis with suitable example.	21/2
		(d)	Explain the function of any one water soluble vitamin.	21/2
			and rangement of any one water soluble vitamin.	21/2
	5.	Solv	e any ten of the following:	(1×10)=10
		(VII) (VIII) (IX) (X) (XI)	What are oligomeric proteins. Define amino acids. Name any two unsaturated fatty acids. Define prosthetic group. What is B-DNA? Define anomers? Whatis cardiolipin? Name any two acidic amino acids. Define allosteric enzyme. Write disease caused by vit. C deficiency. Draw the structure of lactose. Differentiate between Deoxyribose and ribose.	