MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

SEMESTER B.TECH. END SEMESTER EXAMINATION 2023

SUBJECT: [BIOCHEMISTRY]

[BIO2102]

Date of Exam: **Time of Exam: 9:30-12.30** **Max. Marks: 50**

Q. No.	Questions	Marks	CO	BLT
1A	Explain the conformations of monosaccharide molecule and their significance.	2	1	2
1B	Elucidate the characteristics of ES complex and reversibility of inhibition with suitable examples. Give an account of factors affecting the enzyme activity.	4	2,3	4
1C	Describe the bond specificity in phospholipases. Give an account of substrates of phospholipases and their role in cellular integrity.	4	3	5
2A	Can amino acids be chelators? If yes why?	2	2	2
2B	Consider a fatty acid chain length of 17 C, if it undergoes beta oxidation how many ATPs are produced. Give the balance sheet.	4	4	6
2C	Explain the role of lanosterol and squalene in the synthesis of cholesterol. Write the importance of cholesterol.	4	3	3
3A	What is water spine?	2	2	2
3B	What is ring puckering? Comment on torsion angles of DNA and types of tRNA.	4	3	3
3C	What are motifs? Write the hierarchy of protein folding and interactions in detail.	4	4	3
4A	What is prochirality? Explain with example	2	3	2
4B	Give an account of different molecules utilized in building of purine and pyrimidine in cells. Also explain the problems associated with metabolism	4	4	5
4C	Explain the chemical reactions associated with alpha and omega oxidations.	4	4	3
5A	What is carnitine? Explain the role.	2	2	1

5B	What is the role aromatic amino acids in health diagnosis? Give the classifications of amino acids and significance of side chains	**4**	**4**	**4**
5C	What is a shunt in metabolism? Describe the nitrogen acquiring reactions urea cycle and significance of carbmoyl phosphate pool.	**4**	**4**	**5**

CO: Course Outcome;

BLT: BLOOM TAXONOMY LEVEL:

1-Remember, 2-Understand, 3-Application,

4-Analysis, 5-Evaluation, 6-Creation