

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2024****Subject Code:3130403****Date:16-07-2024****Subject Name: Basic Biochemistry and Calculations****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

			MARKS
Q.1*	(a)	Define Buffer.	03
	(b)	What is composition of living matter?	04
	(c)	Discuss in detail about the properties of Biomolecules while its interaction with buffers.	07
Q.2	(a)	Give the structure and functions of disaccharides.	03
	(b)	Write a short note on glycol-conjugate.	04
	(c)	Explain the reaction of oxidative carboxylation.	07
		OR	
	(c)	Draw the sequence of reaction and discuss the pathway of gluconeogenesis.	07
Q.3	(a)	Why peptide group assume planar configuration?	03
	(b)	Narrate the features of turns and loops in protein structure.	04
	(c)	Write about the objectives, methods and conclusions deduced from the Urey Miller's experiment.	07
		OR	
Q.3	(a)	Briefly discuss the titration of amino acids.	03
	(b)	Define : "Domain" in protein structure.	04
	(c)	Give the overview of amino acid catabolism in mammals.	07
Q.4	(a)	Write the composition of nucleic acid.	03
	(b)	Explain about viral RNA.	04
	(c)	Write in detail about the Salvage Pathways for purines and pyrimidines.	07
		OR	
Q.4	(a)	What are the nucleoproteins?	03
	(b)	Enlist the Functions of RNA.	04
	(c)	How are the nucleotides important in metabolic process?	07
Q.5	(a)	What are the membrane lipids?	03
	(b)	Write a short note on: anabolism of glycogen.	04
	(c)	Give a detail explanation of carnitine shuttle for fatty acid transportation into mitochondria.	07
		OR	
Q.5	(a)	Enlist major steps in synthesis of steroids.	03
	(b)	Exhibit the classification of lipids.	04
	(c)	Discuss beta oxidation of saturated fatty acid.	07
