<b>Enrollment No:</b>	<b>Exam Seat No:</b>	

## C. U. SHAH UNIVERSITY Winter Examination-2022

**Subject Name: Chemical Structure and Macromolecules** 

Subject Code: 4SC01CSM2 Branch: B.Sc. (Microbiology)

Semester: 1 Date: 05/01/2023 Time: 11:00 To 01:00 Marks: 50

## **Instructions:**

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1		Attempt the following questions:	(10)
	a)	Draw the shape of $dz^2$ orbital.	1
	b)	Write electronic configuration of Si and Ne.	1
	c)	The maximum number of electron in N shell is	1
	d)	In $N_2$ , $Cl_2$ and $O_2$ bond is present.	1
	e)	What is carbohydrates?	1
	f)	Scleroproteins are found only in	1
	g)	Write the full form of DNA and RNA.	1
	h)	Define: Enantiomers.	1
	i)	What is Chargaff's rule of DNA?	1
	j)	How many types of protein structure are there?	1
Attem	pt any	y four questions from Q-2 to Q-8	
Q-2		Attempt all questions	(10)
	a)	Write a short note on Quantum number.	05
	b)	Discuss in details: Starch.	05
Q-3		Attempt all questions	(10)
	a)	Discuss hydrogen bonding.	05
	b)	Explain structure of proteins.	05
Q-4		Attempt all questions	(10)
	a)	Give the following reaction for monosaccharides. (i)Reduction (ii) Tautomerization.	05
	b)	Explain types of RNA and its functions.	05



Q-5		Attempt all questions	<b>(10)</b>
	a)	Write the function of nucleic acid and structure of nucleotides.	05
	b)	Explain derivative of monosaccharides.	05
Q-6		Attempt all questions	(10)
	a)	Discuss in details: Aufbau's principle.	05
	b)	Discuss any four properties of proteins.	05
Q-7		Attempt all questions	(10)
	a)	Explain DNA double helix.	05
	b)	We might find that a sample of methane weighing 9.67mg produce $26.53$ mg $CO_2$ and $21.56$ mg $H_2O$ . Find percentage of carbon and hydrogen in given compound.	05
Q-8		Attempt all questions	(10)
	a)	Write a brief note on classification of carbohydrates.	05
	b)	Write a note on classification of proteins according compositions.	05

