

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3173912****Date:27/12/2021****Subject Name:Molecular Spectroscopyand Its Applications****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 the Term spectroscopy and Explain It.	03
	(b) Write the importance of molecular Spectroscopy.	04
	(c) Write the application of vibrational analysis in analytical and food chemistry.	07
Q.2	(a) Define the rapid scan.	03
	(b) What is attenuated total reflection Explain it.	04
	(c) Write the characterization of hydrogen bonding.	07
OR		
	(c) Give application of NMR spectroscopy in structural organic and medical chemistry in Brief.	07
Q.3	(a) Define the step scan.	03
	(b) Why we study of conformational flexible molecules.	04
	(c) Explain 2-D vibrational spectroscopy in Brief .	07
OR		
Q.3	(a) What is Raman Spectroscopy explain it.	03
	(b) Why We need characterization of materials Explain it.	04
	(c) Application of vibrational spectroscopy in biochemistry And write there importance.	07
Q.4	(a) Why we need Thin film and coating .	03
	(b) What is the importance study of macromolecules Explain in Short.	04
	(c) Write the Application of the NMR spectroscopy in pharmaceutical industry.	07
OR		
Q.4	(a) What is NMR spectroscopy.	03
	(b) What is the Difference Between IR and Raman Spectroscopy.	04
	(c) Application of vibrational spectroscopy in medicine And Write there importance.	07
Q.5	(a) What is amphiphilic molecules Explain .	03
	(b) Describe the structure and dynamics of proteins in Short.	04
	(c) Explain The structure and dynamics of DNK molecules in Brief.	07
OR		
Q.5	(a) Define the Fluorophores.	03
	(b) What is Fluorescent spectroscopy Explain it.	04
	(c) What is the roll of vibrational spectroscopy Explain in Brief.	07
