Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF BIOSCIENCES AND TECHNOLOGY
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2026-2027

Programme Name & Branch	**: BBT Biotechnology**
Course Code and Course Name	**: BABIT101, Biochemistry**
Slot(s)	**: E2 +TE2**
Faculty Name(s)	**: Dr. Kuntal Pal; Dr. V. Sabareesh**
Class Number(s)	**: 5891**
Date of Examination	**: 13.08.26**
Exam Duration	**: 90 minutes** **Maximum Marks: 50**

General instruction(s):

- Answer All Questions
- Students were allowed to use scientific calculators.
- **Course Outcomes**
  1. Understand the foundations of biochemistry and the importance of solvents
  2. Classify biomolecules based on their structure and properties
  3. Describe the biochemical pathways
  4. Infer the structure-function relation of biomolecules
  5. Demonstrate the biochemical behavior of biomolecules

Q. No	Question	M
1.	a) Show various possible modes of hydrogen bonding for each of the following molecule, with neat diagrammatic illustrations. (i) Lactic Acid $CH_3CH(OH)COOH$. (ii) Acetic Acid CH_3COOH. (iii) Glyceraldehyde CH2(OH)CH(OH)CHO. (5 marks)	10
	b) Distinguish between homolog and paralog with the aid of a schematic diagram. (5 marks)	
2.	Write short notes on endosymbiotic theory.	10
3.	a) The chemical structure of the amino acid, glycine is shown below. Which structural form of glycine would be the predominant population at pH = 2? Rationalize your answer.	5
	b) Illustrate the difference between the two anomers of D-glucose and D-Fructose through Haworth projections.	5
4.	a) Draw the Haworth projections of α-Dglucose and β-Dfructose and indicate the anomeric state of carbon.	5
	b) What is dextran?	5
5.	a) Compare and contrast the configuration of glycosidic bonds in cellulose and in starch. (5 marks)	10
	b) Give two examples of heteropolysaccharides and two examples of homopolysaccharides and briefly describe their respective structural features. (5 marks)	

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