

SET - 1

Total no of pages: 01

Subject code: 3-1-106-25

SHRI GNANAMBICA DEGREE COLLEGE: MADANAPALLE
(AUTONOMOUS)

Four Year Honors Degree Regular Examination January- 2025

Semester -I

Subject: Biological Chemistry

Program: B. Sc (Biotechnology)

(Under CBCS New Regulation w.e.f the AY 2025-26)



Duration: 3 Hrs

Max. Marks: 70

(Draw diagrams wherever necessary)

I. Answer any four questions from the following.

4x5=20 marks

1. Describe the forces that stabilize the DNA double helix.
2. What are triglycerides? Mention their structures.
3. Describe the physicochemical properties of amino acids.
4. Compare lock and key and induced fit models.
5. What is high energy phosphate bond? Give examples.
6. Differentiate between holoenzyme and apoenzyme.
7. Mention the structure and role of porphyrins
8. Define nucleoside and nucleotide with examples

II. Answer ALL Questions.

5x10= 50 marks

9.a. Explain the Watson and Crick model of B-DNA with a neat labeled diagram.

OR

b. Write an essay on the base composition of nucleic acids and its biological implications.

10.a. Describe the classification and structure of carbohydrates.

OR

b. Explain the structure and functions of phospholipids

11.a. Explain the significance and interpretation of the Ramachandran Plot.

OR

b. Describe the four levels of protein structure with suitable diagrams.

12.a. Explain classification and nomenclature of enzymes with suitable examples.

OR

b. Write a detailed note on enzyme inhibition.

13.a. Explain Kreb's cycle and its energetic

OR

b. Explain the concept of free energy, entropy and enthalpy in biological systems.