

- (c) In a double-stranded DNA molecule, the percentage of cytosine is 20%. What would be the percentage of adenine? (5,6,4)
5. Write short notes on the following :
- (a) Biologically important nucleotides
- (b) Biological buffers
- (c) Non-standard amino acids (3×5)
6. (a) Why are Triacylglycerides considered as an ideal storage fuel?
- (b) Explain the role of arachidonic acid in the human body.
- (c) What are epimers? Draw the structure of an example.
- (d) Comment on the features of the peptide bond. Draw the structure of the tripeptide "Gly-Ala-Ala". (4,3,4,4)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3497

I

Unique Paper Code : 2494001001

Name of the Paper : GE: Molecules of Life

Name of the Course : **B.Sc. (Hons.) Biochemistry**

Semester : I

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. There are 6 questions.
3. Attempt any 4 questions.
4. All questions carry equal marks.
5. Question no. 1 is compulsory.

1. (a) Define the following :

- (i) Isoelectric point
- (ii) Anomer
- (iii) Essential fatty acids
- (iv) Chargaff's Rule
- (v) Mutarotation

(b) Identify the following statements as true or false and justify your answer :

- (i) Maltose is a non-reducing sugar.
- (ii) Stearic acid has a lower melting point than oleic acid.
- (iii) Cholesterol provides fluidity to the cell membrane.
- (iv) Proline is a helix breaker.
- (v) Uracil is present in DNA. (5,10)

2. Differentiate between the following :

- (a) Phospholipids and Sphingolipids
- (b) Cellulose and Starch

(c) mRNA and tRNA

(d) Storage lipids and structural lipids

(e) Essential amino acids and non-essential amino acids (3×5)

3. (a) Name and draw the structure of the following :

(i) Phosphatidic acid

(ii) Deoxy-Ribose

(iii) Stearic acid

(iv) α -D-Glucopyranose

(v) Lactose

(vi) Cysteine

(b) Explain different levels of protein structure. (9,6)

4. (a) How do the chain length and level of unsaturation affect the properties of fatty acids ?

(b) Explain the differences between the structure and function of DNA and RNA.