

Department of Botany
School of Chemical & Life Sciences
Jamia Hamdard, New Delhi-110062

B.Sc. (HONS) BOTANY
I SEMESTER EXAMINATION FEB-MARCH 2024

Paper Name: **Biomolecules**

Paper Code: **BBO-MIC101**

Time: **2½ hours**

Maximum Marks: **60**

Note: This paper has 3 sections A, B, and C.

Section A: Answer all the questions. **Section B:** Attempt any 5 out of 6.

Section C: Attempt any 2 out of 3.

Instructions: An equal representation of each course outcome should be done in each section.

Abbreviations used:

CO-Course Outcomes

CLO 1: understand the molecular and chemical foundations of life and appreciate the role of water in biological systems (understand);

CLO 2: comprehend the structure, function and acid base properties of amino acids (understand);

CLO 3: analyze the structure, properties and roles of carbohydrates, lipids and nucleic acids (analyze);

CLO 4: recognize the importance of vitamins in biological systems (understand); and

CLO 5: identify and differentiate between various biomolecules in the laboratory (analyze).

BTL-Bloom's Taxonomy Levels

1- Remembering, 2-Understanding, 3-Applying, 4-Analyzing, 5-Evaluating, 6-Creating

SECTION A

Very Short Type Question (15 questions)

15 x 1 = 15 marks

Q.No.	Questions	Marks	CO	BTL
1	Draw water structure.	1	2	6
2	Give one example of disaccharide.	1	2	1
3	Name sulfur containing amino acids.	1	1	1
4	Water's density is 1 gram per.....cm.	1	5	3
5	Water has a high specific heat of 4184J/(kg x K) at....°C.	1	5	3
6	Enlist the weak interactions in aqueous systems.	1	1	2
7	What is saponification?	1	3	1
8	Define Iodine number.	1	3	1
9	Give two examples of unsaturated fatty acids.	1	3	1
10	What are phytosterols.	1	3	2
11	What do you mean by rancidity?	1	3	2
12	Watson and Crick gives model of DNA in which year.	1	2	1
13	Enlist the names of nucleotides found in RNA.	1	1	1
14	What are structural components of DNA?	1	1	1
15	Define hypervitaminosis.	1	4	2

Please turn over

SECTION B

Short Type Question. (Attempt any five out of six)

5 x 5 = 25 marks

Q. No.	Question	Marks	CO	BTL
1	Classify the amino acid and write importance of amino acid in plants.	5	3	2
2	Structure and function of glycoproteins.	5	3	2
3	Define phospholipids. Classify them with suitable examples and state their functions.	5	2, 3	
4	Mention features of Watson and Crick double Helical model of DNA.	5	1	1
5	Write a short note on classification of lipids with suitable examples.	5	2	3
6	How you can determine that DNA is a genetic material? Mention its physicochemical properties of DNA.	5	3, 5	2, 5

SECTION C

Long type Question (Attempt any two out of three)

2 x 10 = 20 marks

Q.No.	Question	Marks	CO	BTL
1	What do you mean the concept of water as a reactant? Mention physicochemical properties of water.	10	1	3, 4
2	Write the characteristics features of sugars. Highlight the importance of sugars confirmation with suitable illustrations.	10	2	2
3	Give an account of properties and functions of lipids. Also, mention about plant steroids.	10	3	4