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B.Sc.-M.Sc. Integrated Program in Chemistry/ Semester V
End-term Examination

Paper Name: Organic Chemistry IV: Biomolecules
Time: 3 hours

Paper Code: BCH-CC11TH
Maximum Marks: 75

Note: This paper has 3 sections A, B, and C. Attempt all the three sections

Section A: Answer *all* the questions; **Section B:** Answer *any 2* out of 4; **Section C:** Answer *all* the questions, each question has an *internal choice*

Abbreviations Used

CLO- Course Learning Outcome, PLO- Program learning Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

Q.No	<u>SECTION A</u>			BTL	CLO	PLO
Attempt <u>all</u> questions				(10*1.5= 15 Marks)		

A 1. What do you mean by essential and non-essential amino acids? Give two examples each.	2	1	1
A 2. Discuss the process of electrophoresis with suitable example.	4	1	2
A 3. Differentiate between coenzyme and cofactors.	5	2	3
A 4. Define reversion and rancidity.	3	5	2
A 5. Give one method for the synthesis of peptides.	1	5	3
A 6. What are the enzymes? Discuss the salient features of the active site of enzymes.	4	5	2
A 7. Give the structure of NAD ⁺ , FAD and ATP..	4	1	1
A 8. Give the structure of curcumin, azadirachtin and vitamin C and briefly highlight the medicinal value	3	4	1
A 9. Differentiate between oils and fats with suitable examples.	2	3	2
A 10. Which are the common fatty acids present in oils and fats?	3	1	1

SECTION B

Attempt any two out of four **(2*10=20 Marks)**

B 1. Discuss briefly various methods for the synthesis of peptides.	2	1	1
B 2. What is enzyme inhibition? Explain the phenomenon of inhibition.	4	5	3
B 3. Explain the interrelationship in the metabolic pathways of protein, fat and carbohydrate.	4	1	2
B 4. What are the antibiotics? Give a detailed account on chloramphenicol.	4	3	3

SECTION C

Attempt *all* questions, and each question has an Internal choice

(8*5=40 Marks)

C 1. Write a short note on the solid phase synthesis of peptides. 1 1 1

OR

Discuss the interrelationship of amino acids, peptides and proteins. 1 1 1

C 2. Classify various types of enzymes. Write a note on the mechanism of enzyme action, taking an example of trypsin. 5 4 2

OR

What are the factors affecting the action of enzymes? 5 4 2

C 3. Differentiate catabolism and anabolism. 3 2 2

OR

Write an account of the saponification value. 3 2 2

C 4. Outline the steps used in the synthesis of chloroquine. 2 1 2

OR

Sketch the synthesis of Ibuprofen. 2 1 2

C 5. Give an account on Krebs cycle. 3 1 1

OR

Discuss the classification and therapeutic uses of antipyretics. 3 1 1