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M.Sc. Biochemistry, Semester-I Examination-2023
Paper Title: BIOMOLECULES
Paper code- MBC-101

Time: 3 hour

Max Marks: 60

*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*

Section A (Attempt all questions)

(1x10=10 Marks)

Q. No	Questions	BTL	CLO	PLO
a	 acts to control the fluidity of plasma membrane in eukaryotic cells.	1	1	3
b	General formula of carbohydrates is	3	3	3
c	Histidine and alanine havetitration curves.	2	2	2
d	Platelet aggregation is inhibited by	1	4	3
e	In dextran almost all the linkages are.....	4	3	2
f	All naturally occurring amino acids are of configuration.	3	2	3
g	Chitin is a found in exoskeleton of insects.	1	3	3
h	Paper electrophoresis separates amino acids according to	2	1	3
i	Exercise stimulates secretion of glucagon (True/False)	3	4	3
j	 occurs as pancreatic beta cells try to compensate for diminished sensitivity of target tissues to the metabolic effects of insulin	1	4	3

SECTION B: Long type Questions (Attempt any two out of four)

(2x12.5=25 Marks)

Q. No	Questions	BTL	CLO	PLO
1	Define carbohydrates. Give the complete classification and enumerate the functions they perform.	1	1	3
2	Discuss Omega 3 and Omega 6 fatty acids with examples. Also mention four physiological functions of fats.	2	3	2
3	Describe the titration curve of an amino acid which has one ionisable R group. Explain giving at least one example. Draw figures to support your answer. Also, name and describe the functions of any three non-standard amino acids.	3	2	3
4	Discuss different hormones secreted by pancreas. Also mention their role and disease conditions caused by their hypo and hypersecretion.	4	4	2

SECTION C: Short-type Questions. (Attempt all questions, each question has an internal choice)
(5x5=25 Marks)

Q. No	Questions	BTL	CLO	PLO
1	What is a soap micelle. How is it formed OR Differentiate between anomers and epimers. Support your answer with one example for each case.	1	2	3
2	Write a note on physiological actions of TXA ₂ and PGI ₂ in blood clotting/thrombosis. OR Discuss different types of lipoproteins and their functions.	2	3	3
3	Derive the Henderson Hasselbalch equation and discuss two of its major functions. OR Differentiate between nucleotides and nucleosides. What are the two additional types of RNAs present in eukaryotic cells?	3	1	2
4	What are auxins? Mention few responses of plants to Auxin. OR Discuss different types of pheromones.	1	4	3
5	Discuss the mechanisms of insulin secretion from Beta cells. OR Discuss the synthesis of thyroid hormones.	2	4	3