

(Printed Pages 3)

Roll No. .

U525)

M.Sc.-II Sem.

NP-3334

M.Sc. (Biotechnology)

Examination, May-2025

FUNDAMENTAL OF BIOCHEMISTRY

[H-201 (M.Sc.-Biotech.)]

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt questions from all sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Note : Attempt all five questions. $2 \times 5 = 10$

1. What are regulatory enzymes? Give examples.
2. What are sphingolipids and how do they differ from phospholipids?
3. What are carbohydrates? Classify the major classes/types of carbohydrate with examples.

P.T.O.

4. What are Ketone bodies?
5. Why phosphofructokinase is considered as pacemaker of Glycolysis?

Section-B

(Short Answer Type Questions)

Note : Attempt any two questions. $5 \times 2 = 10$

6. Oxidation of fatty acids occur differentially in organelles. Justify the statement highlighting the differences between peroxisomal β -oxidation and mitochondrial β -oxidation.
7. What are the differences between structure and functions of w-3 and w-6 fatty acids?
8. Discuss how pyrimidine biosynthesis is regulated at ATCase step.

Section-C

(Long Answer Type Questions)

Note : Attempt any three questions.

$10 \times 3 = 30$

9. What do you understand by the term "substrate inhibition"? Draw Michaelis-Menten and Lineweaver-Burk Plots,

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showing the effects of substrate inhibition. Explain the pattern of the plots drawn using initial velocity equation, by considering the substrate inhibition as a form of uncompetitive inhibition.

10. Describe the steps involved in glycolysis?
How it is different from Gluconeogenesis.
11. Explain briefly the de novo purine biosynthesis and highlight how inosine mono phosphate (IMP) is converted to AMP and GMP.
12. What is vitamin's? Describe the function, source and deficiency symptom of Vitamin-C.
13. What are the fundamental steps in the oxidation of fatty acids? Explain with examples.