



No. of Printed Pages : 2

Seat No.....

[37]

Sardar Patel University

Sem V B.Sc. Examination 2025

US05 MAMIC02 Microbial metabolism

Date: 06/10/2025

Marks: 50

Time: 10:00am to 12:30pm

- Q:1 Select most appropriate answer: 10
- ETC carriers are arranged to create difference in voltage potential always in
a) negative value b) positive value
c) zero d) 1
 - Compounds which liberate less than 7.3 Kcal. are defined as
a) Low energy compounds b) High energy compounds
c) energy currency of the cell d) None of these
 - Component of ETC, is also known as Cytochrome oxidase
a) Complex I b) Complex II
c) Complex III d) Complex IV
 - is the number of substrate molecule converted to product by an enzyme in a unit time when the enzyme is fully saturated with the substrate
a) K_m b) K_{cat}
c) enzyme specificity d) K_{cat}/K_m
 - says all the substrates must be added to the enzyme before any products can be released.
a) Ordered mechanism b) Random ordered mechanism
c) Ping pong mechanism d) a & b
 - LDH_1 is
a) Zymogen b) allosteric enzyme
c) Isozyme d) enzyme inhibitor
 - End product of α oxidation of fatty acid per cycle is
a) Acetyl CoA b) CO_2
c) fatty acid with Dicarboxylic acid c) ATP
 - 2KDPG is a unique intermediate of
a) ω oxidation b) ED pathway
c) Stickland reaction d) HMP pathway
 - are used in technique/experiment for elucidation of biochemical pathway for biosynthesis of amino acid(s).
a) Nutritional mutants b) Auxotrophic mutants
c) a and b both d) none of these
 - has its role in Palmitic acid biosynthesis .
a) Bactoprenol P_i b) ACP
c) Carnitine PO_4 d) Translocase protein



- Q:2 a) Draw biochemical structure of ATP and explain its role in metabolic reactions. 05
b) Explain: cyclic and non cyclic photophosphorylation with its outcome. 05
OR
- Q:2 Explain: theory of PMF generation and the role of ATP synthase. 10
- Q:3 a) Draw double reciprocal Plot of enzyme kinetics and write significance of K_m and V_{max} . 05
b) Explain: end product inhibition and explain in brief types of it. 05
OR
- Q:3 Explain: Allosteric enzyme regulation. 10
- Q:4 Explain : TCA cycle with its regulation and bioenergetics. 10
OR
- Q:4 Define: β oxidation of fatty acid and explain β oxidation of Palmitic acid in detail. 10
- Q:5 Give Examples of aromatic amino acids and explain: Biosynthesis of Aromatic amino acid family. 10
OR
- Q:5 Explain Calvin Benson cycle with its stoichiometry. 10

