0305N226

Candidate's Seat No :_____

MSc Sem.-2 Examination

409

MLT

Time : 2-30 Hours] **May-2025** **[Max. Marks : 70**

Q1A	Explain the structure of tRNA in detail.	7 Marks
Q1B	Write a note on levels of protein structures and explain each of them in detail.	7 Marks
	OR	
Q1A	Write a brief note on starch and glycogen as homopolysaccharides.	7 Marks
Q1B	Draw a chart of classification of lipids. List out the difference between saturated and unsaturated fatty acid.	7 Marks
Q2A	Describe the Michaelis-Menten equation. What is Km? How does it relate to enzyme-substrate affinity?	7 Marks
Q2B	Discuss the diagnostic importance of plasma-specific and non-specific enzymes with examples.	7 Marks
	OR	
Q2A	Differentiate between competitive and non-competitive inhibition with suitable examples and diagrams.	7 Marks
Q2B	Write briefly on liver enzymes used in diagnostics.	7 Marks
Q3A	Discuss the citric acid cycle (TCA) with its significance in energy production and its role in the synthesis of other biomolecules.	7 Marks
Q3B	Clarify the pathophysiology of diabetes mellitus by comparing type 1 and type 2, describing the role of insulin, symptoms, complications, and treatment variables.	7 Marks
	OR	
Q3A	Outline the electron transport chain (ETC) and oxidative phosphorylation highlighting the sequence of complexes, electron flow, ATP production, and support it with a labelled diagram.	7 Marks
Q3B	Expound the process of lipogenesis including its activator precursor molecules, enzymatic steps and its significance.	7 Marks
Q4A	Enlist the various analytical techniques in clinical biochemistry.	7 Marks
Q4B	Write a short note on Western blot technique.	7 Marks
	OR	
Q4A	Explain the principle and analytical pathway of working in Spectrophotometer.	7 Marks
Q4B	Explain in detail about Agarose Gel Electrophoresis.	7 Marks
Q5	**Answer the following questions (Any Seven)**	**14 Marks**
I	Give two examples of storage proteins.	2 Marks
II	What is the role of Hyaluronic Acid? Where is it present?	2 Marks
III	Draw a struture of 20:5 ($\Delta^{5,8,11,14,17}$) Eicosapentaenoic acid. Which omega fat is it?	2 Marks

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IV	Name two enzymes that exhibit isoenzyme forms.	2 Marks
V	Define holoenzyme and apoenzyme.	2 Marks
VI	Which enzymes assay are used for muscular disorder?	2 Marks
VII	What is the rate-limiting step in beta-oxidation?	2 Marks
VIII	What causes gout and mention the common symptoms of the same.	2 Marks
IX	Briefly explain the genetic cause of phenylketonuria (PKU) and give major dietary restrictions for individuals with PKU.	2 Marks
X	What is difference between Spectrophotometer and Colorimeter?	2 Marks
XI	Explain about Stationary Phase and Mobile Phase.	2 Marks
XII	Enlist the common application of electrophoresis.	2 Marks

BEST OF LUCK