

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2023 – 2024)**

**M. Sc. DEGREE EXAMINATION - NOVEMBER 2023**  
**BIOTECHNOLOGY**  
**FIRST SEMESTER**

**COURSE : CORE**  
**PAPER : BIOCHEMISTRY**  
**SUBJECT CODE : 23BY/PC/BC14**  
**TIME : 3 HOURS**

**MAX. MARKS:100**

<b>Q. No.</b>	<b>SECTION A</b> <b>Answer ALL Questions (10 x 1 = 10 marks)</b>	<b>CO</b>	<b>KL</b>
1	Define pH.	1	1
2	Describe blood plasma.	1	1
3	Draw the structure of galactose.	1	1
4	Define peptide bond.	1	1
5	Describe sterols.	1	1
6	Draw the structure of triglyceride.	1	1
7	How many ATPs are produced at the end of the TCA cycle?	1	1
8	List the phases of the HMP shunt.	1	1
9	Define a biocatalyst.	1	1
10	Write the functions of isomerase.	1	1
<b>Q. No.</b>	<b>SECTION – B</b> <b>Answer ALL Questions (5 x 2 = 10 marks)</b>	<b>CO</b>	<b>KL</b>
11	Relate the properties of water.	2	2
12	Explain reducing and non-reducing disaccharides.	2	2
13	Illustrate the structure of any two pyrimidine bases.	2	2
14	Explain the importance of oxidative phosphorylation.	2	2
15	Indicate is the function of creatine kinase.	2	2
<b>Q. No.</b>	<b>SECTION C</b> <b>Answer ALL Questions (4 x 10 = 40 marks)</b>	<b>CO</b>	<b>KL</b>
16a	Demonstrate how does haemoglobin and respiration help in maintaining the pH of the body. (or)	3	3
16b	Present the classification of monosaccharides and give the anomeric forms of glucose.		
17a	Compile and classify the amino acids based on their nutritional properties. (or)	3	3
17b	Present an illustrative account on the structure of DNA and mention its functions.		
18a	Examine the respiratory chain with labelled illustrations. (or)	4	4
18b	Outline the urea cycle.		
19a	Categorize the factors that affect enzyme action. (or)	4	4
19b	Organize and classify the enzymes based on the IUBMB.		

Q. No.	<b>SECTION – D</b> <b>Answer ALL Questions (2 x 20 = 40 marks)</b>	CO	KL
20a	Evaluate the structural conformation of proteins. List out and explain the structures and bonds involved. <b>(or)</b>	4	5
20b	Evaluate the steps in glycolysis. Give its bioenergetics.		
21a	Make the steps involved in activation of acyl CoA and explain the steps in the $\beta$ -oxidation of fatty acids <b>(or)</b>	5	6
21b	Formulate the clinical and pharmaceutical uses of enzymes.		

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