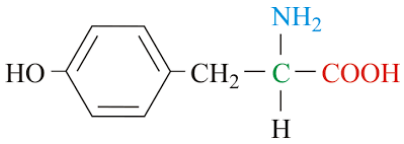
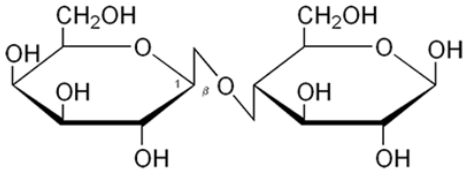
Name: **Enrolment No:**	UPES UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2023

Course: Nutritional Biochemistry **Semester : III**
Program: BTech Food Technology **Duration : 3 Hours**
Course Code: HSFT 2003 **Max. Marks: 100**

Instructions: Attempt all questions

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q 1	Recall the name of water-soluble vitamins.	1.5	CO1
Q 2	Non-protein part of enzyme called as……	1.5	CO1
Q 3	Define respiratory quotient.	1.5	CO1
Q 4	Identify the given below structure 	1.5	CO1
Q 5	Recognize the given below structure 	1.5	CO1
Q 6	List the name of amino acid having sulfur group.	1.5	CO1
Q 7	Recall the structure of lauric acid (12:0).	1.5	CO1
Q 8	Remember the site of Electron Transport Chain.	1.5	CO1
Q 9	Write the biological significances of carbohydrates.	1.5	CO1
Q 10	List the name of any basic amino acid.	1.5	CO1
Q 11	Define iodine number.	1.5	CO2
Q 12	Discuss why unsaturated fatty acids liquid and saturated fatty acids are waxy in nature at room temperature.	1.5	CO2
Q 13	Discuss the function of secretin.	1.5	CO2
Q 14	Describe the relationship between chain length of fatty acid and melting point.	1.5	CO2
Q 15	Describe the role of gastrin in protein digestion.	1.5	CO2
Q 16	Discuss the function of insulin.	1.5	CO2
Q 17	Describe function of glucagon.	1.5	CO2

Q 18	**Describe Michaelis-Menten constant (Km).**	**1.5**	**CO2**
Q 19	**Define Gibbs free energy of activation.**	**1.5**	**CO2**
Q 20	**Define anomers? Explain with example of glucose.**	**1.5**	**CO2**
	Section B **(4Qx5M=20 Marks)**		
Q 1	**Define BMR and write different factors affecting BMR.**	**5**	**CO1**
Q 2	**Discuss the main purpose of preparatory phase of glycolysis and recall the name of enzymes involved.**	**3+2**	**CO2**
Q 3	**Explain specific dynamic action (SDA). Mention the SDA for proteins, fats and carbohydrates.**	**2+3**	**CO3**
Q 4	**Both cellulose and alpha amylose consist of (1-4) linked D-glucose units. Despite the similarities, a person having alpha amylose in diet gain weight while person on diet of cellulose will starve. Why?**	**5**	**CO5**
	Section C **(2Qx15M=30 Marks)**		
Q 1	**Define Enzymes. Explain the classification of enzymes with suitable example.**	**3+12**	**CO3**
Q 2	**Define metabolism. Defend the given below statement:** **One Glucose molecule converted in two molecules of pyruvate through multistep process and net yield is two ATP per glucose.**	**3+12**	**CO5**
	Section D **(2Qx10M=20 Marks)**		
Q 1	**Define gluconeogenesis. Contrast three steps of gluconeogenesis that differ from glycolysis.**	**2+8**	**CO4**
Q 2	**Discuss protein deficiency and overconsumption. Examine the excretion pathway of excess nitrogen resulting from the breakdown of amino acid in the form of urea molecule inside the cell.**	**3+7**	**CO4**