PRN:		Course Code :	U21PC103

Second Year **B.Sc. FST/MLT/Biotech** End Semester Examination Winter 2024

General Chemistry 000517

Day and Date: Mon 1- 2 DEC 2024 Max Marks: **50**

Time: 10:30AM To 12:30PM Duration:

Instructions:

1. All questions are compulsory.
2. Use of calculator is permitted.

			Marks	Bloom's Level	CO
Q.1		**Attempt the all following questions**			
	a)	In periodic table, the first two columns on the left and the last six columns on the right are called the_____. The ten-column block between these columns contains_____ .	2	L1	CO1
	b)	Balance the following reaction and write balanced equation. $Ca(C_2H_3O_2)_2 + Na_3PO_4 \longrightarrow NaC_2H_3O_2 + Ca_3(PO_4)_2$	2	L1	CO2
	c)	Write the statement of law of conservation of energy.	2	L1	CO2
	d)	List the four colligative properties of solutions.	2	L1	CO1
	e)	In **respiration**, the biochemical process by which the oxygen we inhale in air oxidizes foodstuffs (Glucose $C_6H_{12}O_6$) to carbon dioxide and water, redox reactions provide energy to living cells. Write the balanced chemical reaction involved in this process.	2	L1	CO3
Q.2		**Attempt <u>any two</u> from the following questions**			
	a)	Write note on Bohr's atomic model.	5	L2	CO1
	b)	Explain the arrangement of elements in periodic table.	5	L2	CO1
	c)	Write property unit and symbols of seven SI units.	5	L2	CO1
Q.3		**Attempt <u>any two</u> from the following questions**			
	a)	Aspirin ($C_9H_8O_4$) is synthesised from salicylic acid ($C_7H_6O_3$) in a 1:1 ratio. A synthetic chemist uses 2.0 grams of salicylic acid. How many moles of salicylic acid did they use?	5	L3	CO1
	b)	Write a brief note on Mole concept.	5	L2	CO2
	c)	Solve the following questions. • How many moles of H_2O in 100 g of H_2O? (*2 Marks*) • What is the mass in grams of 1 molecule of sucrose (MW 342.3)? (*3 Marks*)	5	L3	CO2

ESE

Q.4	**Attempt <u>any two</u> from the following questions**				
	a)	What is kinetic theory of gases? Give its four statements.	5	L2	CO3
	b)	What quantity of heat is transferred when a 150.0 g block of iron metal is heated from 25.0°C to 73.3°C? (Specific heat of iron is 0.108 cal/g · °C).	5	L3	CO2
	c)	What is organic chemistry? Take an overview of hydrocarbons and functional groups.	5	L3	CO4
Q.5	**Attempt <u>any two</u> from the following questions**				
	a)	Write note on redox reactions.	5	L2	CO3
	b)	A saline solution with a mass of 355 g has 36.5 g of NaCl dissolved in it. What is the mass/mass percent concentration of the solution?	5	L3	CO2
	c)	Take an overview of three acid-base theories.	5	L2	CO2

ESE