PRN:		Course Code:	U21PC103

First Year **BSc FST/MLT/Biotech** End Semester Examination Winter 2024

General Chemistry

000577

Day and Date: Wed 4 DEC 2024 Max Marks: **50**

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

Instructions:

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

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	What are the SI units for following physical properties? Amount, Temperature, Electrical current, Luminous intensity.	2	L1	CO1
	b)	What is the mass in grams of 2 mole of sucrose (MW 342.3)?	2	L1	CO2
	c)	Write any two differentiating points between ionc and covalent bonding.	2	L1	CO2
	d)	Give one example of weak acid and weak base.	2	L1	CO1
	e)	List the four types of redox reactions.	2	L1	CO3
Q.2		**Attempt <u>any two</u> from the following**			
	a)	Write note on Ionic compounds.	5	L2	CO1
	b)	What is de Broglie relationship? Explain.	5	L2	CO1
	c)	Draw a rough sketch of periodic table, label the four blocks and explain the arrangement of elements in periodic table.	5	L2	CO1
Q.3		**Attempt <u>any two</u> from the following**			
	a)	How many moles of gold are there in a 9 g wedding ring which is 60% pure gold by mass? (MW of Gold is 197)	5	L3	CO1
	b)	How many moles of ethene (C_2H_4) are there in 1.4 kg?	5	L3	CO2
	c)	Balance the following reaction step by step. $NH_3 + O_2 \longrightarrow NO + H_2O$	5	L3	CO2
Q.4		**Attempt <u>any two</u> from the following**			
	a)	How much energy in calories is required to heat 125 g of iron from 25°C to 150°C? (Specific heat of iron is 0.108 cal/g · °C).	5	L3	CO2
	b)	380 ml of dry oxygen gas was collected at 25°C under a pressure of 730 mm. What volume will it occupy at 760 mm pressure while temperature remains constant?	5	L3	CO2
	c)	What is polymer? Write a brief note on polymers.	5	L2	CO2
Q.5		**Attempt <u>any two</u> from the following**			
	a)	Write note on phases and intermolecular interactions.	5	L2	CO3
	b)	A sample of 45.0% v/v solution of ethanol (C_2H_5OH) in	5	L3	CO2

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water has a volume of 115 mL. What volume of ethanol solute does the sample contain?

c)	Write balanced reaction that has silver ions and aluminium metal as reactants and silver metal and aluminium ion as products.	5	L2	CO2

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