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Daffodil International University

Department of Nutrition and Food Engineering
Faculty of Health and Life Sciences
B.Sc. in Nutrition and Food Engineering
Midterm Examination Summer 2025

Course Code: 0531-1103 **Course Title:** Physical, Inorganic and Analytical Chemistry

Level and Term: L-1,T-1 **Section: 252 All** **Course Teacher Initials: DNU, DMR, DFR**

Time: 1 hour 30 minutes **Total Marks:** 25

Splitting any answer is strictly prohibited

				Marks
1	(a)	Write the symbol, Latin name and electronic configuration of Copper and Potassium.	[CLO1; PLO1; C2]	2
	(b)	Explain why atomic radius decreases from Li to F in period 2.	[CLO1; PLO1; C1]	3
2	(a)	Give examples of Group-1 and Group-18 elements. Write down the common characteristics of Group-1 and Group-18.	[CLO1; PLO1; C3]	2
	(b)	Explain the Hund's rule with example.	[CLO1; PLO1; C2]	3
3	(a)	Illustrate hydrogen bond with example.	[CLO1; PLO1; C1]	2
	(b)	Explain the bond type of the following compounds: i) CO_2 ii) $MgCl_2$ iii) H_2O	[CLO1; PLO1; C3]	3
4	(a)	Calculate the number of molecules of CO_2 present in 8L CO_2?	[CLO2; PLO1; C3]	2
	(b)	80g Chlorine gas is mixed with 6g hydrogen gas. Which is the limiting reactant here? How much hydrogen is left over?	[CLO2; PLO1; C3]	3
5	(a)	Find out the molarity of the solution when 5g NaOH in a 500mL solution	[CLO2; PLO1; C3]	2
	(b)	2g metallic magnesium reacts with necessary amount of oxygen and yields 3.25g magnesium oxide. What is the percentage of the yield?	[CLO2; PLO1; C3]	3

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