



## 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) $\text{CO}_2$ [CLO1; PLO1; C3] ii) $\text{MgCl}_2$ iii) $\text{H}_2\text{O}$	3
4	(a) Calculate the number of molecules of $\text{CO}_2$ present in 8L $\text{CO}_2$ ? [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