ourdiu.com | Shared by Tasnim Ridhi

Daffodil International University

Department of Nutrition and Food Engineering
Faculty of Health and Life Sciences
BSc. in Nutrition and Food Engineering
Midterm Examination Fall 2025

Course Code: 0531-1103
Level and Term: L-1,T-1
Time: 1 hour 30 minutes

Course Title: Physical, Inorganic and Analytical Chemistry
Section: 253 All
Course Teacher Initials: DNU, DAMR, DZI
Total Marks: 25

Splitting any answer is strictly prohibited

				Marks
1	(a)	Write the symbols of all alkali and alkaline-earth metals.	[CLO1; PLO1; C2]	2
	(b)	How i) ionization energy ii) electronegativity and iii) atomic radius changes across period-2 in periodic table?	[CLO1; PLO1; C1]	3
2	(a)	Write down the electronic configuration of the following elements: (i) Fe (ii) Cu.	[CLO1; PLO1; C3]	1+1
	(b)	What are isotopes, isobars, and isotones? Give an example for each of them.	[CLO1; PLO1; C2]	3
3	(a)	What are the differences between ionic and covalent bond?	[CLO1; PLO1; C1]	2
	(b)	Define Hydrogen Bonding. Explain the types of Hydrogen Bonding with examples.	[CLO1; PLO1; C3]	3
4	(a)	How many molecules are present in 15g of CO_2?	[CLO2; PLO1; C3]	2
	(b)	A 500mL solution has 40g substance dissolved in it, and its molarity is 0.75. What is the molecular mass of the solute in the solution?	[CLO2; PLO1; C3]	3
5	(a)	Determine the Oxidation State of the central atom of the following compounds: i) P in Na_3PO_3 (ii) B in $NaBH_4$ (iii) Cr in $K_2Cr_2O_7$ (iv) P in H_3PO_4.	[CLO2; PLO1; C3]	2
	(b)	The percent composition of a compound is C=92.31%, H=7.69%. When molecular mass of the compound is 78, determine its molecular formula.	[CLO2; PLO1; C3]	3