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Daffodil International University

Department of Electrical and Electronic Engineering
Faculty of Engineering

Mid Term Examination, Summer – 2026

Course Code: 0531-121
Section: A, B
Full Marks: 25

Course Title: Chemistry
Level-Term: L1-T2
Exam Date: June 30, 2026

Teacher's Initial: AAA
Time: 1.5 Hours

Q1. **Explain** the variation of atomic radius across a group and across a period with the definition of atomic radius. CO-1 C(2) 5

Or

Discuss the terms ionization energy and electron affinity shortly and the reason of being the 1st ionization energy of O lower than that of N.

Q2. (a) **State** the D-Broglie's wave particle duality equation. **Derive** the equation. CO-2 C(3) 3

(b) Given that, frequency of a light spectrum is 5×10^{10} sec^{-1}. **Calculate** the energy. CO-2 C(3) 2

Q3. (a) **Define** Isobar and Isotone with examples. CO-1 C(1) 2

(b) Given, $R_H = 109678cm^{-1}$. **Determine** the energy, wavelength and wave number of radiations emitted due to the electron transition from 7th energy shell to 2nd energy shell. CO-1 C(2) 3

Q4. **Explain** metallic bond and the properties of metal. CO-3 C(2) 5

Or

Describe covalent bond with some of its examples. **Discuss** the differences between sigma bond & pi bond.

Q5. (a) **Define** Hydrogen bond. **Mention** the bonds water can have. CO-3 C(2) 2

(b) Given, there are two isomers of an organic compound having different H-bonds. **Explain** the H-bonds present in O-nitrophenol & P-nitrophenol. CO-3 C(2) 3