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Daffodil International University

Department of Electrical and Electronic Engineering
Faculty of Engineering
Midterm Examination, Fall-2026

Course Code: 0531-121
Section: A, B, C, D, E, F
Full Marks: 25

Course Title: Chemistry
Level-Term: L1-T2
Exam Date: Nov 02, 2026

Teacher's Initial: AAA, SRA
Time: 1.5 Hours

Answer all the questions. Please do not split answers.

Q1. **Define** ionization energy. **Discuss** the exemption from regular pattern regarding the periodic changes in ionization energy of Mg & Al, P & S. — CO-1, C(2) — 5

Or

Define electron affinity and electronegativity. **Discuss** the basic differences between these two and similarities in their periodical changes.

Q2. (a) **Derive** the Rhydberg's equation. — CO-1, C(1), C(3) — 3+2

(b) **Define** Isotope and Isobar with examples.

Q3. (a) The maximum wavelength of a spectral series of H atom is 6563 Å. **Determine** the series does the spectral line belong to? — CO-2, C(3) — 2+3

(b) **Calculate** the number of photons will be required to obtain 1.0 J energy from a radiation of 400 nm wavelength.

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

Or

Define covalent bond. State some of its examples. **Discuss** the differences between sigma bond & pi bond.

Q5. (a) **Define** Ionic Bond. **Name** the bonds a water molecule can have. — CO-3, C(1), C(2) — 2+3

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