

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER - 2023**

ENGINEERING CHEMISTRY - II

[Maximum marks: 100]

[Time: 3 Hours]

PART – A

Maximum marks: 10

I (Answer *all* the questions in one or two sentences. Each question carries **2** marks)

1. Mention the monomer of the following polymers.
(a) Polyethene (b) PVC (c) Buna-S (d) Nylone-66
2. State Pauli Exclusion Principle.
3. What is Strong electrolyte? Write two examples.
4. List any two advantages of optical fibre.
5. What are the pollutants of Water pollution? (5 x 2 = 10)

PART – B

Maximum marks: 30

II (Answer any *five* of the following questions. Each question carries **6** marks)

1. (a) Distinguish between saturated compound & Unsaturated compound. (3)
(b) What is functional group? Which functional group present in aldehyde, amine and carboxylic acid? (3)
2. Define Heisenberg's Uncertainty Principle with mathematical statement. (6)
3. (a) Differentiate between Electroplating & Anodizing. (3)
(c) What are the uses of salt bridge? (3)
4. What is smog? Explain different types of smog. (6)
5. (a) What do you understand by degenerate orbital? Give one example. (3)
(b) Draw the shapes of S & P orbitals. (3)
6. What are the Uniqueness of carbon? Explain all. (6)
7. What are the characteristics of good fuel? (6)

PART – C

Maximum marks: 60

(Answer *one full* question from each unit. Each full question carries **15** marks)

UNIT –I

- III.** (a) What is chemical bond? What are the different types of chemical bond explain with example? (10)
(b) Differentiate between orbit & orbital. (5)

OR

- IV.** (a) What is Quantum number? What are the different set of quantum number? (5)
(b) What are the demerits of Bohr's model of atom? (5)
(c) Define Aufbau principle and Hund's rule. (5)

UNIT-II

- V.** (a) What is electrolysis? Explain the electrolysis of molten NaCl and aqueous NaCl. (9)
(b) State Faraday's laws of electrolysis. (6)

OR

- VI.** (a) What is Corrosion? What are the different types of corrosion? (5)
(b) How can prevent corrosion? (5)
(c) Explain hydrogen-oxygen fuel cell. (5)

UNIT-III

- VII.** (a) What are the general properties of refractories? (5)
(b) How are the polymers classified based on the types of polymerization? Explain with one example. (5)
(c) Write any five differences between organic compound and inorganic compound. (5)

OR

- VIII.** (a) What is glass? Explain any three types of glass. (5)
(b) What is rubber? How can you modify the properties of natural rubber? (5)
(c) Differentiate between thermoplastics and thermosetting plastics. (5)

UNIT-IV

- IX.** (a) How ozone produced in the stratosphere? How is it depleted? What are its Consequence? How can control ozone depletion? (10)
(b) What are the goals of green chemistry? (5)

OR

- X.** (a) How acid rain formed? What are consequence of acid? How can reduce the production of acid rain? (10)
(b) What is cracking? What are the different types of cracking? (5)
