

International Islamic University Chittagong

Department of ETE

Term: Final Examination
Course Code: CHEM-2341
Full Marks: 50

Semester: Autumn-2021
Course Title: Chemistry
Time: 3 Hours

Group - A (Answer any two)

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| 1. | a. | Explain electrolysis process in a chemical cell. | 5 | C01 |
| | b. | Create $m=z$ and $\rho=R$; where m is mass of deposited substance, z is constant, ρ is specific resistance and R is resistance. | 5 | C02 |
| 2. | a. | What are the properties of dilute solutions? Why do a solution become cool and warm during mixing. | 5 | C01 |
| | b. | Prove $W \propto P$; where W = mass and P = pressure of a gas. Exhibit the distribution law. | 5 | C02 |
| 3. | a. | What are the Molarity, Molality and Normality ? | 5 | C01 |
| | b. | Exhibit the Daniell cell with half cell reaction. | 5 | C02 |

Group - B (Answer any three)

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| 4. | a. | What is Le-Chatelier principle? State are the characteristics of chemical equilibrium? | 5 | C01 |
| | b. | Using Law of mass action develop an expression for the equilibrium constant K_c and K_p of the following reaction and also finds the relationship between K_p & K_c .
$N_2(g) + 3 H_2(g) \rightleftharpoons 2 NH_3(g); \Delta H = - 92 \text{ KJ}$ | 5 | C02 |
| 5. | a. | Explain the order and molecularity of a reaction? And why collision is required for a reaction. | 5 | C01 |
| | b. | Develop $= \frac{1}{t} \frac{x}{a(a-x)}$; Where the symbols has their usual meanings. | 5 | C02 |
| 6. | a. | Explain properties of solution and electro-dialysis process. | 5 | C01 |
| | b. | Develop a Langmuir Adsorption Isotherm equation with hypothesis. | 5 | C02 |
| 7. | a. | What is the Tyndall effect, Gel and Suspension-define? | 5 | C01 |
| | b. | Draw the diagram of different types of purification process of solution and explain logically. | 5 | C02 |