



International Islamic University Chittagong

Department of Pharmacy

Program: B. Pharm (Hons.)

Examination: Final

Session: Spring-2022

Course Code: Pharm-1205

Course Title: Physical Pharmacy-II

Full Marks: 50

Times: 2 Hours and 30 Minutes

[N.B: Answers of separate groups must be written in separate script]

Group A

Answer any two questions

Marks: 20

1. a) Interpret the general principle of solubility. 3
b) Write down the factors that affect the solubility. 3
c) Derive the following equation: $\text{pH}_p = \text{pK}_a + \log \frac{S-S_o}{S_o}$ 4
2. a) What is Rheology? What are the applications of Rheology in pharmaceutical industry? 6
b) Write down the uses of colloids in pharmaceutical industry. 4
3. a) Express the transition state theory. 5
b) A new drug 'X' was launched in your company in the last night. The owner of the company interested to know the expiry date within tomorrow. Which method you have to follow and how can you measure the expiry date of the product? 5

Group B

Answer any three questions

Marks: 30

4. a) What is Colloid? Classify colloidal system. How can you determine the charge of the colloidal sol particles? 6
b) What is Tyndall effect? Describe the Bredig's Arc method. 4
5. a) Contrast between specific conductance, equivalent conductance, and molar conductance. 3
b) The specific conductance of N/5 KCl solution at 25°C is 0.002780 mho. The resistance of the cell containing this solution is 500 ohm. Calculate the cell constant. 3
c) Evaluate Faraday's laws of electrolysis. Derive the equation of electrochemical equivalent considering First law. 4
6. a) Describe how a redox reaction produces an electrical current in voltaic cells. 4
b) Define electromotive force (emf). Write down the measurement process of emf of a cell. 4
c) Correlate the feasibility of a reaction with the emf. 2
7. a) "Weston standard cell is most widely used" – Do you agree with this comment? 5
b) Construct a standard hydrogen electrode. 5