

Government General Degree College, Dantan-II
B. Sc (H) 4th Semester Internal Evaluation-2020

Subject: Chemistry

Paper: CC-8 (T+P)

F.M: 20 (Theory) + 10 (Practical)

Time: 2 h

Answer any **one question** from each Part

Part A : Physical Chemistry (Theory)

1. Draw and explain the phase diagram of water.
2. Derive thermodynamically the relation between elevation of boiling point and molality of solution and explain how the osmotic pressure of any solution is determined experimentally.
3. What is liquid junction potential? Derive an expression of liquid junction potential for a electrolyte concentration cell.
4. Write short note on LCAO-MO treatment of H_2^+
5. State Debye-Huckel limiting law and derive the expression of mean ionic activity coefficient from the expression of ion-atmosphere interaction potential.

Part B : Physical Chemistry (Practical)

1. Write down the procedure of pH-metric titration of a dibasic acid against strong base.
2. Write the principle involved in Potentiometric titration of Mohr's salt solution against standard $K_2Cr_2O_7$ solution.
3. Explain phenol-water phase diagram.
4. Write the principle involved determination of K_{sp} for AgCl by potentiometric titration of $AgNO_3$ solution against standard KCl solution.