B.SC Examination Semester II

Subject- Chemistry (CBCS) M.Marks:80

Time Allowed: 3 Hrs Course No. :- UCHTC – 201

Section – A

Note: Attempt all questions. Each question carries 3 marks.

Q.1 Define bond energy with example.

Q.2 Define Buffer solution.

Q.3 What is Markownikoff's rule? Give an example.

Q.4 Define Gibb's free energy. Give its significance.

Q.5 Why are phenols more acidic than alcohols.

Section – A

Note: Attempt all questions. Each question carries 7 marks.)

Q.6 State and explain Third law of Thermodynamics.

Q.7 What is Lechatelier's principle? Give the optimum conditions for the maximum production of ammonia in Haber's process.

Q.8 How is phenol prepared from cumene- Give mechanism.

Q.9 What is solubility product? Give its two application.

Q.10 Explain the relative strength of C-X bond in alkyl halides and aryl halides towards nucleophilic substitution reactions.

Section – C

Note: Attempt any two questions. Each question carries 15 marks.

Q.11 a) What is enthalpy of reaction? How does it vary with temperature? (08)

(b) Discuss common Ion effect. (07)

Q.12 a) Give the thermodynamic deviation of law of chemical equilibrium. (08)

b) Define degree of ionisation. Discuss the factors affecting it. (07)

Q.13 Write short notes on cannizzaro reaction and witting reaction. (8+7)

Q.14 a) Give the mechanism of Aldol condensation. (08)

b) How will you get alcohol from (04)

i) Esters ii) Grignard's Reagent

c) What is Lucas Test? (03)

Q.15 a) Write short note with mechanism on Reimer-Tiemann Reaction. (08)

b) Distinguish between S_N1 & S_N2 reactions. (07)