UCH/CT/4008

B.SC. DEGREE EXAMINATION,APRIL 2018
II YEAR - IV SEMESTER
Core Major - Paper VIII - GENERAL CHEMISTRY-VIII

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10 marks)$

Answer any **TEN** questions

1. What is chemical potential?
2. What is standard free energy change?
3. Define activity coefficient.
4. State theIII law of thermodynamics.
5. Give the preparation of epoxides from ethene.
6. What is Sulphonal? Mention its uses.
7. What is Grignard reagent?
8. What is law of mass action?
9. State Nernst heat theorem.
10. What are crown ethers?
11. What happens when diethylether is treated with HI?
12. How does chemical potential varies with temperature?

Section B $(5 \times 4 = 20 marks)$

Answer any **FIVE** questions

13. Derive Gibbs Duham equation.
14. Discuss Vant Hoff equation.
15. Explain Williamsons synthesis and its limitations.
16. What is mustard gas? How it is prepared?
17. Explain any four reactions of aldehydes and ketones with grignard reagent.
18. Discuss vantHoff reaction isotherm.
19. Explain the mechanism of acid catalysed and base catalysed ring opening of epoxides.

P.T.O.

Section C $(3 \times 10 = 30 marks)$

Answer any **THREE** questions

20. Derive Duhem Margulus equation.
21. What is fugacity? Describe the experimental method of determining fugacity.
22. Explain with mechanism when (i) thiols react with aldehydes and ketones. (ii) thiols are oxidised.
23. What happens when (i) isopropyl lithium is treated with diisopropyl ketone (ii) alkyl lithium reacts with unsaturated ketones. (iii) phenyl lithium with pyridine.
24. Explain how the absolute entropy of a substance is determined with the help of third law of thermodynamics.