

**D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE – 1**  
**SEMESTER EXAMINATIONS**  
**APRIL – 2016**  
**GENERAL CHEMISTRY - IV**

12CCH4A

Time: 3 Hrs

Max. Marks: 75

**SECTION – A (10 X 2 =20)**

Answer ALL the questions.

1. Mention the elements of carbon family.
2. Name any two oxyacids of phosphorous.
3. Write carbylamine reaction.
4. Write Hoffmann reaction.
5. What happens when succinic acid is heated?
6. What is Wittig reaction?
7. State Henry's law.
8. Give any two examples for completely miscible binary solutions.
9. What do you mean by elevation in boiling point?
10. Define CST.

**SECTION – B (5 X 5 =25)**

Answer any FIVE of the following questions.

11. Write a note on the anomalous behaviour of oxygen.
12. What are interhalogen compounds? Describe its classification.
13. Explain the mechanism of  $S_N1$  reaction.
14. Describe the mechanism of E2 reaction.
15. Write notes on a) Reformatsky reaction  
b) Michael addition.
16. Derive an expression for  $\Delta G_{mix}$  and  $\Delta H_{mix}$  for ideal solutions.
17. Discuss briefly about azeotropic mixtures.
18. Derive an expression for elevation in boiling point with molality of the solution.

**SECTION – C (3 X 10 =30)**

Answer ALL the questions.

19. a) i) Compare the elements carbon and silicon.  
ii) Write notes on silicates. (5 + 5)  
(Or)  
b) Explain the mechanism of  
i)  $S_N1$  reaction.  
ii) E1 reaction. (5 + 5)
20. a) Discuss about the acid strengths of substituted haloacids and substituted benzoic acids. (10)  
(Or)  
b) Explain the vapour - pressure composition curves of completely miscible binary solutions. (10)
21. a) i) Write notes on the effect of impurities on CST.  
ii) Describe thermodynamic derivation of distribution law. (5+ 5)  
(Or)  
b) i) Write the preparation and properties of peracids of sulphur.  
ii) Write a note on the Activity of a component in an ideal solution. (7 + 3)

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