

BS/2051
CHEMISTRY-4-C-10 BHB-19
(Semester-VI)

Time : Three Hours]

[Maximum Marks : 74

Note : The question paper consists of three Sections A, B and C. Section A and B have four questions from the respective sections of the syllabus and carry 11 marks each. Candidates are required to attempt *two* questions each from Section A and B of the question paper. Section C consists of 15 short answer type questions carry 30 marks and candidates are required to attempt the entire Section C.

SECTION-A

- I. How are soap different from detergents ? Give their mechanism of action. Explain the formation of micelle formation of lipids. 11
- II. What are natural fats? Give examples. Explain and give the significance of saponification number, iodine value and acid value of fats. 11
- III. List the products and discuss the mechanism of reduction of acid chlorides, anhydrides, esters and amides with LiAlH_4 . 11

- IV. How do you account for the observation that aldehydes and ketones undergo nucleophilic addition to the carbonyl group whereas acyl derivatives undergo nucleophilic substitution on carbonyl group? 11

SECTION-B

- V. Explain one and two component system by taking suitable examples. 11
- VI. Explain Arrhenius theory of electrolyte dissociation and give its limitations. 11
- VII. What are conductometric titrations? Explain titrations involving precipitation reactions. 11
- VIII. Describe Senderson-Hazel equation and determine the pH of a solution by using glass electrode. 11

SECTION-C

- IX. (a) Give the uses of redox potential.
- (b) How would you measure the conductance at infinite dilution of ammonium acetate ?
- (c) Derive the relation between specific and equivalent conductance of an electrolyte.
- (d) Explain the variation of specific conductance of a solution with dilution.
- (e) Explain equilibrium and component with examples.

- (f) What do you mean by congruent melting point ?
- (g) Explain migration of ions by taking suitable example.
- (h) What is allotropy and enantiotropy?
- (i) Benzoyl chloride is hydrolyzed at much slower rate than acetyl chloride. Explain.
- (j) Discuss in brief the mechanism of acidic hydrolysis of amides.
- (k) Complete : $\text{HOCH}_2\text{CH}_2\text{CH}_2\text{COOH} + \text{H}^+ \rightarrow$
- (l) $\text{RCOCl} + \text{LiAlH}_4 \rightarrow$
- (m) Give the general characteristics of solvents.
- (n) What do you mean by edible and industrial oils of vegetable origin?
- (o) Give the structural formula of alkyl and aryl sulphonates. (15×2=30)
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