

# CONTENTS

Topic	Page No.
<b>Acknowledgement</b>	i-ii
<b>Content</b>	iii-vi
<b>CHAPTER I: Scope and object of the Research Work</b>	<b>1-12</b>
1.1. Object and Application of the Research Work	1-3
1.2. Importance of Solvents used	3-5
1.3. Methods of Investigation	5-6
1.4. Summary of the Works done	6-10
References	11-12
<b>CHAPTER II: General Introduction</b>	<b>13-67</b>
2.1 The Importance of solution chemistry	13-14
2.2 Investigation on ion-solvent interaction	14-15
2.3 Density	15-19
2.4 viscosity	19-33
2.5 Ultrasonic Speed	33-37
2.6 Correlating Equations	37-40
2.7 Conductance	40-53
2.8 Solvation Model-Some Recent Trends	53-54
2.9 Conductance-Some Recent Trends	54-55
References	56-67
<b>CHAPTER III: Experimental Section</b>	<b>68-79</b>
3.1. Source and Purification of the Chemicals used	68-71
3.2. Experimental Methods	71-77
References	78-79
<b>CHAPTER IV: Studies on Thermodynamic and Transport Properties of Binary Mixtures of Acetonitrile with Some Cyclic Ethers at Different Temperatures by Volumetric, Viscometric, and Interferometric Techniques</b>	<b>80-114</b>
4.1. Introduction	80-81
4.2. Experimental Section	81-82

<b>Topic</b>	<b>Page No.</b>
4.3. Results and Discussion	82-89
4.4. Conclusion	89
References	90-91
Tables	92-106
Figures	107-114
<b>CHAPTER V: Volumetric, viscometric and acoustic studies of binary mixtures of 2-ethoxy ethanol with 1-alkanols at 298.15 K</b>	<b>115-155</b>
5.1. Introduction	115-116
5.2. Experimental Section	116
5.3. Results and Discussion	117-125
5.4. Conclusion	125
References	126-128
Tables	129-146
Figures	147-155
<b>CHAPTER VI: Excess Molar Volume, Excess Energy and Viscosity Deviation of Binary Mixtures of Tetrahydrofuran with Some Hydrocarbons at Various Temperatures</b>	<b>156-177</b>
6.1. Introduction	156
6.2. Experimental Section	156-157
6.3. Results and Discussion	157-160
6.4. Conclusion	160
References	161
Tables	162-168
Figures	169-177
<b>CHAPTER VII: Physico-Chemical Studies on the Solute-Solvent Interactions and Ultrasonic Speed of Resorcinol in 2-Methoxyethanol and Tetrahydrofuran at Different Temperatures</b>	<b>178-196</b>
7.1. Introduction	178
7.2. Experimental Section	178-179
7.3. Results and Discussion	179-184
7.4. Conclusion	184
References	185-186

Topic	Page No.
Tables	187-191
Figures	192-196
<b>CHAPTER VIII: Electrical Conductance of Alkali Chlorides in Mixed Solvents: Methanol + Carbon Tetrachloride and Methanol + 1,4-Dioxane at 298.15 K</b>	<b>197-212</b>
8.1. Introduction	197-198
8.2. Experimental Section	198-199
8.3. Results and Discussion	199-203
8.4. Conclusion	203-204
References	205-206
Tables	207-211
Figures	212
<b>CHAPTER IX: Physicochemical investigation on interactions of some amino acids with aqueous tetra butyl ammonium bromide solution at 298.15 K</b>	<b>213-234</b>
9.1. Introduction	213
9.2. Experimental Section	214-215
9.3. Results and Discussion	215-222
9.4. Conclusion	222-223
References	234-225
Tables	226-232
Figures	233-234
<b>CHAPTER X: Thermodynamic and Transport Properties of Some Monobasic Acetate Salts in Aqueous Binary Mixtures of Methanol at Different Temperatures</b>	<b>235-255</b>
10.1. Introduction	235
10.2. Experimental Section	235-236
10.3. Results and Discussion	236-241
10.4. Conclusion	241
References	242
Tables	243-255
<b>CHAPTER XI: Thermodynamic and transport properties of binary mixtures of dimethyl sulfoxide with t-butyl alcohol, butyl acetate, 2-butanone and butyl amine at different temperatures</b>	<b>256-273</b>

<b>Topic</b>	<b>Page No.</b>
11.1. Introduction	256
11.2. Experimental Section	256-257
11.3. Results and Discussion	257-262
11.4. Conclusion	262
References	263-264
Tables	265-270
Figures	271-273
<b>CHAPTER XII: Concluding Remarks</b>	<b>274-277</b>
<b>APPENDIX</b>	
I. List of Publications	278
II. Seminar/Symposium/Convention attended	279
III. Reprints of the Published Papers	