

LIST OF FIGURES

Chapters	Figures	Page No
Chapter IV	Fig. 4.1: Job plot of (b) PB- β -CD system at $\lambda_{\max}$ =243nm at 298.15 K .R= $\frac{[PNB]}{([PnB] + [CD])}$, ΔA =absorbance difference of PNB without and with β -CD	70
	Fig. 4.2: Variation of surface tension of aqueous PNB solution with increasing concentration of β -CD at 298.15K.	70
	Fig. 4.3: Variation of conductivity of aqueous PNB solution with increasing concentration β -CD at 298.15K.	71
	Fig.4.4: ¹ H NMR Spectra of (a) β -CD (b) PNB and (c) 1:1 molar ratio of β -CD + PNB in D ₂ O in 298.15 K.	72
	Fig.4.5: FT-IR spectra of β -CD, PNB, PNB- β -CD inclusion complex	73
	Fig.4.6: Scanning electron microphotographs (a) β -CD (b) PNB (c) PNB- β -CD inclusion complex.	73
Chapter V	Fig-5.1: Variation of limiting apparent molar volumes (ϕ_v^0) of phenylethanolamine in aqueous α -and β -cyclodextrins solution with molarity (red and blue colour are for α -and β -cyclodextrins respectively)	82
	Fig-5.2: Variation of viscosity B coefficient of phenylethanolamine in aqueous α -and β -cyclodextrins solution with molarity (red and blue column respectively for α -and β -cyclodextrins respectively)	83
	Fig 5.3: FTIR spectra of of phenylethanolamine and inclusion complexes of it in α -and β -CD at 298.15 K	85
	Fig-5.4: UV-VIS spectra of phenylethanolamine in different concentrations of CDs using methyl orange (MO) as probe.	87
	Fig-5.5: Job's plot of different concentration of (A) β -CD in phenylethanolamine (B) α -CD in phenylethanolamine using methyl orange (MO) as probe.	88

Chapters	Figures	Page No
	Fig-5.6: (A) Plot of $1/\Delta A$ against $1/[\alpha\text{-CD}]$ for examining stoichiometry of inclusion complexes .(B) Plot of $1/\Delta A$ against $1/[\beta\text{-CD}]$ for examining stoichiometry of inclusion complexes	89
	Fig-5.7: ^1H NMR spectra of phenylethanolamine and inclusion complexes of it with α -and β -CDs in D_2O at 299.15 K.	90
	Fig-5.8: NMR ROSEY spectra of inclusion complexes of (A) phenylethanolamine and α -CD (B) phenylethanolamine and β -CD.	91
	Fig-5.9: SEM images of α -CD, β -CD and their inclusion complexes with phenylethanolamine.	92
Chapter VI	Fig-6.1: Molecular structure of paracetamol. Molecular structure of β -cyclodextrin.	109
	Fig.6.2. Dependence of standard partial molar volumes (ϕV^0) for paracetamol on the molality of β -cyclodextrin in aqueous solutions at $T = 298.15, 308.15, 318.15$ K. Symbols: Υ , $T = 298.15$ K; Φ , $T = 308.15$ K; Δ , $T = 318.15$ K.	109
	Fig.6.3. Plots of standard partial molar volume of transfer ($\Delta\phi^t V^0$) for paracetamol on the molality of β -cyclodextrin in aqueous solutions at $T = 298.15, 308.15, 318.15$ K. symbols: Υ , $T = 298.15$ K; Φ , $T = 308.15$ K; Δ , $T = 318.15$ K	110
	Fig.6.4. Absorption spectra of aqueous β -cyclodextrin (1.10×10^{-4} mol.L $^{-1}$) solution and paracetamol with various in aqueous β -cyclodextrin concentrations (2) 0 mol.L $^{-1}$, (3) 3.10×10^{-4} mol.L $^{-1}$, (4) 5.10×10^{-4} mol.L $^{-1}$, (5) 9.10×10^{-4} mol.L $^{-1}$, (6) 12.10×10^{-4} mol.L $^{-1}$, (7) 14.10×10^{-4} mol.L $^{-1}$.	110
	Fig.6.5. Reciprocal plot for $1/A$ vs. $1/(\beta\text{-cyclodextrin})$ of paracetamol β -cyclodextrin inclusion complex.	111
Chapter VII	Fig. 7.1: Plot of the variation of density (ρ) of solutions as a function of molality (m) for UA- H_2O solutions of pyridoxine at $T = 298.15$ K, 303.15 K, 308.15 K.	123

Chapters	Figures	Page No
	Fig.7.2. Plot of the variation ϕ_V of solutions as a function of molality (m) for UA-H ₂ O solutions of pyridoxine at T = 298.15 K, 303.15K, 308.15K.	124
	Fig.7.3: Viscosities, η of PY in various mole fractions of UA aqueous solutions at T = 298.15 K, 303.15K, 308.15K	125
	Fig.7.4: Plots of viscosity B-coefficients for pyridoxine in different mole fractions in UA solutions at T = (298.15–308.15) K.	126
	Fig.7.5: Plot of Molar conductance (Λ_m) against concentration in aqueous PY in mass fraction of 2×10^{-5} m of the solution	126
	Fig.7.6: Plot of limiting molar refraction (R_M^0) vs. mass fraction for 1×10^{-5} m (sky blue), 2×10^{-5} m (brown), 3×10^{-5} m (purple) of PY in aqueous UA.	126
	Fig.7.7: FTIR Spectra of pure pyridoxine phosphate (PY), uric acid (UA) and mixture of PY-UA aqueous solution	127
	Fig.7.8: UV spectra for pure pyridoxal phosphate	128
	Fig.7.9: UV spectra for pyridoxal phosphate in the presence of aqueous uric acid at room temperature	128
	Fig.7.10: NMR spectra for PY in D ₂ O	129
	Fig.7.11: NMR spectra for UA in D ₂ O	129
	Fig.7.12: NMR spectra for the mixture of PY + UA in D ₂ O	129
Chapter VIII	Fig. 8.1. Job plot of (a) PMO/ α -CD and (b) PMO/ β -CD systems at 298.15K.	134
	Fig. 8.2. FTIR spectra of (a) PMO, (b) α -cyd and (c) PMO/ α -cyd (1:1 molar ratio) solid inclusion complex in KBr.	136
	Fig. 8.3. FTIR spectra of (a) PMO, (b) β -CD and (c) PMO/ β -CD (1:1 molar ratio) solid inclusion complex in KBr.	137
	Fig. 8.4. ESI mass spectra of (a) PMO/ α -CD inclusion complex and (b) PMO/ β -CD inclusion complex.	139

Chapters	Figures	Page No
	Fig. 8.5. Powder X-ray diffraction pattern of (a) α -CD, (b) PMO/ α -CD (1:1 molar ratio), (c) β -CD and (d) PMO/ β -CD (1:1 molar ratio) inclusion complex.	140
	Fig. 8.6. TGA profiles of (a) α -cyd ; PMO/ α -cyd and (b) β -cyd; PMO/ β -cyd inclusion complex systems.	141
Chapter IX	Fig. 9.1: Variation of limiting apparent molar volumes (ϕ_V^0) of N- methyl glycine solution in paracetamol solution at different temperatures.	148
	Fig. 9.2: Variation of viscosity B coefficient with temperature in K of aqueous N-methyl glycine in paracetamol solution.	152
	Fig. 9.3: ^1H NMR spectra of N-methyl glycine, paracetamol and their solution in D ₂ O.	154