

CONTENTS

PART I		
SYNTHESIS AND CHARACTERIZATION		
Chapter 1	INTRODUCTION AND REVIEW	1
	Azomethines (Schiff base) ligands	3
	Application of metal complexes of Schiff bases	5
	Review of metal complexes derived from Schiff bases	9
	Review of metal complexes derived from amino acid Schiff bases	16
	Significance of study	22
	Scope of present investigation	22
Chapter 2	MATERIALS AND METHODS	24
Chapter 3	STUDIES ON Mn(II), Fe(III), Co(II), Cu(II) AND Zn(II) COMPLEXES OF 3-(ANTHRACEN-9(10H)-YLIDENEAMINO) PROPANOIC ACID	30
Chapter 4	STUDIES ON Mn(II), Fe(III), Co(II), Cu(II) AND Zn(II) COMPLEXES OF (S)-2-(ANTHRACEN-9(10H)-YLIDENEAMINO)-5-GUANIDINOPENTANOIC ACID [A9Y5GPA]	42
Chapter 5	STUDIES ON Mn(II), Fe(III), Co(II), Cu(II) AND Zn(II) COMPLEXES OF (S)-2-(ANTHRACEN-9(10H)-YLIDENEAMINO)-3-(1H-IMIDAZOLE-4-YL) PROPANOIC ACID [A9Y3IMPA]	52
Chapter 6	STUDIES ON Mn(II), Fe(III), Cu(II) AND Zn(II) COMPLEXES OF (S)-2-(ANTHRACEN-9(10H)-YLIDENEAMINO)-3-(1H-INDOLE-3-YL) PROPANOIC ACID (A9Y3INPA)	62
Chapter 7	STUDIES ON Cr(III), Mn(II), Fe(III), Ni(II), Cu(II), AND Zn(II) COMPLEXES OF (S)-2-(ANTHRACEN-9(10H)-YLIDENEAMINO)-3-PHENYL PROPANOIC ACID [A9Y3PPA]	73
Chapter 8	STUDIES ON Mn(II), Fe(III), Cu(II) AND Zn(II) COMPLEXES OF (R)-2-(ANTHRACEN-9(10H)-YLIDENEAMINO)-3-MERCAPTO-PROPANOIC ACID (A9Y3MPA)	82
SUMMARY		92
REFERENCES		96

PART II		
CORROSION INHIBITION STUDIES		
Chapter 1	INTRODUCTION AND REVIEW	108
	Corrosion inhibitor	108
	Amino acids as corrosion inhibitors in acid solutions – A review	111
	Schiff bases as corrosion inhibitors in acid solutions – A review	119
	Scope of present investigation	125
Chapter 2	MATERIALS AND METHODS	127
Chapter 3	CORROSION INHIBITION STUDIES ON AMINO ACIDS IN 1M HCl AND 0.5 M H ₂ SO ₄ ON CARBON STEEL	147
	Weight loss studies	147
	Mechanism of inhibition	157
Chapter 4	CORROSION INHIBITION STUDIES ON SCHIFF BASES IN 1M HCl ON CARBON STEEL	163
	Weight loss studies	164
	Electrochemical impedance spectroscopy studies	167
	Potentiodynamic polarization studies	172
	Effect of temperature	177
	Mechanism of inhibition	189
Chapter 5	CORROSION INHIBITION STUDIES ON SCHIFF BASES IN 0.5M H ₂ SO ₄ ON CARBON STEEL	191
	Weight loss studies	191
	Synergistic studies	194
	Electrochemical impedance spectroscopy studies	198
	Potentiodynamic polarization studies	204
	Mechanism of inhibition	213
SUMMARY		217
REFERENCES		220
PART III		
ANTIMICROBIAL STUDIES		
Chapter 1	INTRODUCTION AND REVIEW	229

	Schiff base and metal complexes as antimicrobial agents - A review	240
	Scope of present investigation	249
Chapter 2	MATERIALS AND METHODS	251
Chapter 3	ANTIMICROBIAL STUDIES ON SCHIFF BASES AND THEIR COMPLEXES	258
	Antibacterial studies on the Schiff base A9Y3APA and its metal complexes	258
	Antibacterial studies on the Schiff base A9Y5GPA and its metal complexes	260
	Antibacterial studies on the Schiff base A9Y3IMPA and its metal complexes	260
	Antibacterial studies on the Schiff base A9Y3INPA and its metal complexes	261
	Antibacterial studies on the Schiff base A9Y3PPA and its metal complexes	262
	Antibacterial studies on the Schiff base A9Y3MPA and its metal complexes	263
	Antibacterial studies on the antibiotics	264
	SUMMARY	275
	REFERENCES	278

PART IV

CYCLIC VOLTAMMETRIC STUDIES

Chapter 1	INTRODUCTION AND REVIEW	283
	Cyclic voltammetric studies on Schiff bases and metal complexes – A review	284
	Scope of present investigation	289
Chapter 2	MATERIALS AND METHODS	291
Chapter 3	CYCLIC VOLTAMMETRIC STUDIES ON SCHIFF BASES AND COMPLEXES	297
	CV studies on the Schiff base A9Y3APA & Zn(II)-A9Y3APA complex	297
	CV studies on the Schiff base A9Y5GPA & Cu(II)-A9Y5GPA complex	302
	CV studies on the Schiff base A9Y3IMPA	307
	CV studies on the Schiff base A9Y3INPA	311
	CV studies on the Schiff base A9Y3PPA & Cu(II)-A9Y3PPA complex	315
	CV studies on the Schiff base A9Y3MPA & Cu(II)-A9Y3MPA complex	320
	SUMMARY	325
	REFERENCES	327