

CONTENTS

SUMMARY OF THE THESIS	PAGE
CHAPTER : 1 INTRODUCTION	
1.1 INTRODUCTION	1
1.2 BORN APPROXIMATION	3
1.3 EIKONAL APPROXIMATION	7
1.4 EIKONAL BORN SERIES METHOD	8
1.5 DAS METHOD	10
1.6 HIGH ENERGY HIGHER ORDER BORN APPROXIMATION	12
1.7 PARTIAL WAVE ANALYSIS	16
1.8 APPROACH TO THE PRESENT INVESTIGATION	19
CHAPTER : 2 ELECTRON SCATTERING BY He, Ne, Ar ATOMS	
2.1 INTRODUCTION	22
2.2 APPLICATION OF BORN APPROXIMATION	23
2.3 EIKONAL BORN SERIES APPROACH	27
2.4 WALLACE CORRECTION	39
2.5 DAS METHOD	43
2.6 MODIFIED APPROACH IN DAS METHOD	45
2.7 METHOD OF PARTIAL WAVES	50
2.8 TABLES (2.1-2.4)	53
2.9 FIGURES (2.1-2.7)	56
2.10 RESULTS AND DISCUSSION	63
CHAPTER : 3 SCATTERING OF ELECTRONS BY He LIKE IONS	
3.1 INTRODUCTION	65
3.2 FIRST BORN AMPLITUDE	66
3.3 IMAGINARY PART OF SECOND BORN AMPLITUDE	68

	PAGE
3.4 REAL PART OF SECOND BORN AMPLITUDE	75
3.5 AVERAGE EXCITATION ENERGY	82
3.6 EXCHANGE AMPLITUDE	85
3.7 PROGRAMS	85
3.8 TABLES (3.1 – 3.6)	102
3.9 FIGURES (3.1 – 3.8)	108
3.10 RESULTS AND DISCUSSIONS	117
CHAPTER : 4 DISCUSSIONS AND CONCLUSIONS	119
APPENDIX	122
REFERENCES	124
PUBLICATIONS	127