## 545 BENe

### CONTENTS

#### PART I. INTRODUCTION

1.	QUANTITATIVE ANALYSIS	3
2.	ERRORS OF MEASUREMENTS AND COMPUTED QUANTITIES	5
3.	SUMMARY OF GENERAL LAWS	14
4.	THE LABORATORY AND ITS APPARATUS	24
	DADT IL MEAQUDING AND MEAQUDING INCTDUMENTO	
	PART II. MEASURING AND MEASURING INSTRUMENTS	
5.	COUNTING, LENGTH, MEASURING INSTRUMENTS	49
6.	DETERMINATION OF MASS	53
7.	DETERMINATION OF VOLUME	104
8.	DETERMINATION OF TEMPERATURE	149
9.	DETERMINATION OF THE PRESSURE OF GASES	161
10.	ABSORPTION OF RADIATION (SPECTROPHOTOMETRY, COLORIMETRY)	166
11.	DETERMINATIONS BY THE MEASUREMENT OF PHYSICAL PROPERTIES	194
12.	DETERMINATION OF EQUIVALENCE	203
	Electrical Equivalent (Coulometry)	204
	Chemical Equivalent (Titrimetry)	205

## PART III. PRELIMINARY TASKS

13.	CARE AND ASSEMBLY OF APPARATUS	257
14.	REAGENTS, THEIR USE AND CARE	269
15.	PREPARATION OF SOLUTIONS	277
16.	ALIQUOT PARTITION	284
17.	MIXING	287
18.	DISINTEGRATION; CRUSHING, GRINDING, CUTTING	295

# PART IV. ANALYTICAL OPERATIONS

19.	THE SAMPLE FOR ANALYSIS	309
20.	ESTABLISHMENT OF SEPARABLE PHASES	321
21.	MECHANICAL SEPARATION OF PHASES	357
	Quantitative Transfer of Matter	357
	Separation of Solid Phases	359
	Separation of Solid and Liquid	360
	Separation of Gas and Solid	403
	Separation of Immiscible Liquids	425
	Separation of Gas and Liquid	435

# PART V. A COURSE OF STUDY

22.	SUGGESTED PROCEDURE	449
23.	WEIGHING	452
24.	MEASUREMENT OF VOLUME	456
25.	GRAVIMETRIC DETERMINATIONS	458
26.	ACID-BASE TITRATIONS	486
27.	TITRATIONS WITH SILVER NITRATE	508
28.	TITRATIONS WITH COMPLEXING AGENTS	521
29.	TITRATIONS WITH PERMANGANATE	529
30.	TITRATIONS WITH OTHER OXIDANTS	542
31.	TITRATIONS WITH IODINE AND THIOSULFATE	547
32.	TITRATIONS IN NONAQUEOUS OSLVENTS	561
33.	AQUAMETRY	567
34.	CONCENTRATION FROM ABSORPTION OF VISIBLE RADIATION	569
	Comparison With Series of Standards	569
	Direct Comparison With Standard Solution	573
	Use of Photometers and Spectrophotometers	577
35.	COMPLEX MATERIALS BY A CASCADE OF SEPARATIONS	584