## CONTENTS

	PREFACE		ii	
	STUDY PROGRAMME		vii	
1.	INTRODUCTION			
	1.1 The Parts of a Slide Rule	1	1	
	1.2 The C and D (or x) Scales	2		
	1.3 Reading the C and D Scales	3		
	1.4 Accuracy of the Slide Rule	5		
2.	MULTIPLICATION (C and D Scales)			
	2.1 Adding with Uniform Scales	6	6	
	2.2 Simple Multiplication	6		
	2.3 Using the Right Index for Multiplication	8		
	2.4 Locating the Decimal Point	9		
	2.5 Continuous Multiplication	11		
3.	DIVISION (C and D Scales)		13	
	3.1 Subtracting with Uniform Scales	13		
	3.2 Simple Division	13		
	3.3 Locating the Decimal Point	15		
	3.4 Continuous Division	16		
4.	COMBINED OPERATION ON C and D SCALES		18	
	4.1 Alternate Division and Multiplication	18		
	4.2 Locating the Decimal Point	21		
	4.3 Miscellaneous Problems	21		
5.	SQUARES AND SQUARE ROOTS (A and B Scales)			
	5.1 The Form of the A and B Scales	23		
	5.2 Squares	23		
	5.3 Locating the Decimal Point for Squares	24		
	5.4 Miscellaneous Squares	25		
	5.5 Square Roots (Numbers between 1 and 100) 5.6 Square Roots (Numbers greater than 100)	25		
	1	26		
	5.7 Square Roots (Numbers less than 1) 5.8 Miscellaneous Problems	28		
		28		
6.	CUBES AND CUBE ROOTS (K Scale)	20	30	
	6.1 The Form of the K Scale 6.2 Cubes	30		
		30		
	6.3 Cube Roots (Numbers between 1 and 1000) 6.4 Cube Roots (Numbers greater than 1000)	32 33		
	6.5 Cube Roots (Numbers less than 1)	34		
	6.6 Miscellaneous Problems	35		
7	INVERTED (RECIPROCAL) SCALE (CI)	33	36	
1.	7.1 The Form of the CI Scale	36	30	
	7.2 Reciprocals (Numbers between 1 and 10)	36		
	7.3 Reciprocals (Numbers outside range 1 to 10)	37		
	7.4 Multiplication (CI and D Scales)	38		
	7.5 Division (CI and D Scales)	39		

8.	FOLDE	D SCALES (CF, DF and CIF)		42
	8.1	The Form of the Folded Scales	42	
	8.2	Multiplication and Division (CF, CIF, DF Scales)	42	
	8.3	Multiplication and Division by π	46	
	8.4	Miscellaneous Problems	47	
9.	PERCE	NTAGE, RATIO AND PROPORTION		49
	9.1	Percentage	49	
	9.2	Ratio and Proportion	50	
10.	COMBI	NED OPERATIONS ON C, D, CI, DI, CF, I	OF.	
		CIF, A, B, BI, K AND K' SCALES		53
	10.1	Simple Combinations of Roots, Powers and		
		Reciprocals	53	
	10.2	Continued Multiplication and Division	57	
	10.3	Multiplication and Division of Roots, Powers		
		and Reciprocals	60	
	10.4	Miscellaneous Problems	63	
11.	SINES A	AND COSINES (S and ST Scales)		65
	11.1			
		90°)	65	
	11.2	Sine (ST scale—for angles less than 5°44')	66	
	11.3		67	
	11.4	Cosecant and Secant	68	
	11.5	Multiplication and Division with Sines and Co-		
		sines	68	
12.	TANGE	NT (T, T <sub>1</sub> , T <sub>2</sub> , and ST Scales)		71
	12.1	Tangent (T <sub>1</sub> or T Scale—for angles between		
		5°44′ and 45°)	71	
	12.2	Tangent (ST scale—for angles less than 5°44')	72	
	12.3	Tangent (T <sub>2</sub> and T Scales—for angles between		
		45° and 84°18′)	72	
	12.4	Tangent (ST Scale—for angles greater than		
		84°18′)	73	
	12.5	Cotangent	75	
	12.6	Multiplication and Division with Tangents	75	
13.		GOREAN (P) SCALE		77
	13.1	The Form of the P Scale	77	
	13.2	Calculating $\sqrt{1-x^2}$ (P and D Scales)	77	
	13.3	Converting Sines to Cosines (and vice versa)	78	
	13.4	Sines of Large Angles and Cosines of Small		
		Angles	79	
	13.5	Square Roots (Numbers just less than 1, 100		
		etc.)	80	
	13.6	The Difference of Two Squares $(\sqrt{x^2-y^2})$ or		
		x <sup>2</sup> —y <sup>2</sup> )	81	
	13.7	Further Applications of the P Scale	82	
14.	RADIA	NS		84
	14.1	Basic Relationships	84	
	14.2	Converting using C and D Scales	84	
	14.3		85	
	14.4	Arc Length and Area of a Sector	86	

142

150

ANSWERS

INDEX