Contents

Preface vii
Background reference material viii
Book 4: Linear algebra
1: Direct sums and Jordan forms 1
2: Duality and normal transformations 18
Solutions to Chapter 1 31
Solutions to Chapter 2 67
Test paper 1 96
Test paper 2 98
Test paper 3 100
Test paper 4 102
Test paper 4 102
Book 5: Groups
1 Subgroups 1
2 Automorphisms and Sylow theory 10
3 Series 15
4 Presentations 22
Solutions to Chapter 1 29
Solutions to Chapter 2 51
Solutions to Chapter 3 62
Solutions to Chapter 4 79
Test paper 1 94
reor puper 1 34

Test paper 2 96
Test paper 3 98
Test paper 4 100

Book 6: Rings, fields and modules

1: Ideals

2: Divisibility 6

3: Fields 11

4: Modules 16

Solutions to Chapter 1 27

Solutions to Chapter 2 35

Solutions to Chapter 3 45

Solutions to Chapter 4 58

Test paper 1 88

Test paper 2 92

Test paper 3 96

Test paper 4 98