## Contents

Note on exposition	•	•	•	٠	٠			•	٠	٠	٠	٠		Χ
1. Basic concepts														
1.1 Finite incidence structures														
1.2 Incidence preserving maps														:
1.3 Incidence matrices														
1.4 Geometry of finite vector spaces														2
2. Designs														56
2.1 Combinatorial properties														50
2.2 Embeddings and extensions														
2.3 Automorphisms of designs														
2.4 Construction of designs														92
3. Projective and affine planes														11
3.1 General results														11
3.2 Combinatorics of finite planes .														
3.3 Correlations and polarities														15
3.4 Projectivities		٠			٠	٠	٠	٠	٠				٠	15
4. Collineations of finite planes														169
4.1 Fixed elements and orders														169
4.2 Collineation groups														
4.3 Central collineations														18
4.4 Groups with few orbits		٠												<b>2</b> 0)
5. Construction of finite planes										٠				219
5.1 Algebraic representations														
5.2 Planes of type IV				,										22
5.3 Planes of type V														236
5.4 Planes of types I and II		٠								٠				246
6. Inversive planes														25
6.1 General definitions and results .														25:
6.2 Combinatorics of finite inversive	pla	ıne	s											262
6.3 Automorphisms	٠.													
C 4 (TTL - 1 - 1 C) (1														~~

Contents 

Appendices . 7.1 Association	- achomos a	nd	กล	rti	al	đ	esi	gn	ıs														28
7.1 Association	1 Schemes w		P					•															29
7.1 Association 7.2 Hjelmslev	planes		•	•	٠	•	•	•	•	•	•	•	•	•									30
0 11	J - alreans													•	•	•	•	•	•				
7.3 Generalize 7.4 Finite sen	ni-planes .		٠								٠	٠	٠	٠	٠	•	٠	•	•	٠	•	•	3(