Table of Contents

Notations

Introduction

0

I	Drinfeld Modules	
	1. Algebraic Theory	2
	2. Analytic Theory	5
	3. The Operation of $GL(r, A_f)$	7
	4. The Modular Schemes for $r = 1$ and 2	9
II	<u>Lattices</u>	
	1. Adelic Description of Lattices	10
	2. Lattice Invariants	13
	3. Morphisms of Lattices	15
III	Partial Zeta Functions	
	1. Relations with Lattice Sums	17
	2. The Rational Function Z _{a.m} (S)	20
	3. Evaluation at $s = 0$ and $s = -1$	22
IV	Drinfeld Modules of Rank 1	
	1. The Case of a Rational Function Field	25
	2. Normalization	26
	3. Some Lemmata	30
	4. Computation of Lattice Invariants	33
	5. Distinguished 1-D-Modules	38
v	Modular Curves over C	
	1. The "Upper Half-Plane"	40
	2. Group Actions	43
	3. Modular Forms	47
	4. Elliptic Points	50
	5. Modular Forms and Differentials	51
	Appendix: The First Betti Number of T	54

1

VI	Expansions around Cusps	
	1. Preparations	58
	2. Formulae	60
	3. Computation of the Factors	61
	4. The A-Functions	65
	5. Some Consequences	71
VII	Modular Forms and Functions	
	1. The Field of Modular Functions	78
	2. The Field of Definition of the Elliptic Points	82
	3. Behavior of $E^{(q-1)}$ at Elliptic Points	83
	4. The Graded Algebra of Modular Forms	85
	5. Higher Modular Curves	86
	6. Modular Forms for Congruence Subgroups	92
VIII	Complements	
	1. Hecke Operators	94
	2. Connections with the Classification of Elliptic Curves	
	3. Some Open Questions	99
	Index	101
	List of Symbols	102

104

Bibliography