

CONTENTS

| | |
|---|-----|
| Preface. | i |
| Prerequisites. | 1 |
| Geometric Notions. | 4 |
| Introduction | 10 |
| §1. Dimension Theory. | 14 |
| §2. Hilbert-Samuel Polynomial | 20 |
| §3. Depth | 44 |
| §4. Regular Rings | 57 |
| §5. Behavior Under Local Homomorphism | 79 |
| 5A. Behavior of dimension | 80 |
| 5B. Behavior of depth | 87 |
| §6. Completion and Normalization. | 100 |
| 6A. Completion. | 100 |
| 6B. Normalization | 108 |